

JPRS 79990

1 February 1982

China Report

AGRICULTURE

No. 187



FOREIGN BROADCAST INFORMATION SERVICE

NOTE

JPRS publications contain information primarily from foreign newspapers, periodicals and books, but also from news agency transmissions and broadcasts. Materials from foreign-language sources are translated; those from English-language sources are transcribed or reprinted, with the original phrasing and other characteristics retained.

Headlines, editorial reports, and material enclosed in brackets [] are supplied by JPRS. Processing indicators such as [Text] or [Excerpt] in the first line of each item, or following the last line of a brief, indicate how the original information was processed. Where no processing indicator is given, the information was summarized or extracted.

Unfamiliar names rendered phonetically or transliterated are enclosed in parentheses. Words or names preceded by a question mark and enclosed in parentheses were not clear in the original but have been supplied as appropriate in context. Other unattributed parenthetical notes within the body of an item originate with the source. Times within items are as given by source.

The contents of this publication in no way represent the policies, views or attitudes of the U.S. Government.

PROCUREMENT OF PUBLICATIONS

JPRS publications may be ordered from the National Technical Information Service, Springfield, Virginia 22161. In ordering, it is recommended that the JPRS number, title, date and author, if applicable, of publication be cited.

Current JPRS publications are announced in Government Reports Announcements issued semi-monthly by the National Technical Information Service, and are listed in the Monthly Catalog of U.S. Government Publications issued by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Correspondence pertaining to matters other than procurement may be addressed to Joint Publications Research Service, 1000 North Glebe Road, Arlington, Virginia 22201.

1 February 1982

CHINA REPORT
AGRICULTURE

No. 187

CONTENTS

PEOPLE'S REPUBLIC OF CHINA

GENERAL INFORMATION

National

'RENMIN RIBAO' Editorial Views Yearend Distribution (XINHUA Domestic Service, 18 Dec 81)	1
National Forest Zoning Meeting Held in Taiyuan (Jin Jiasheng; XINHUA Domestic Service, 25 Dec 81)	3
'RENMIN RIBAO' Carries Editorial on Land Management (XINHUA Domestic Service, 3 Jan 82)	5
Problems Concerning Early Rice in South Discussed (Huang Peimin, Chen Jian; NONGYE KEJI TONGXUN, 17 Nov 81). .	7
'RENMIN RIBAO' Editorial on Seed Selection (Editorial; RENMIN RIBAO, 14 Jan 82)	13

Briefs

PRC Crop Strains	16
------------------	----

Anhui

Briefs

Hanshan County Grain Production	17
Boxian County Grain Output	17

Fujian

Disease-Resistant Rice Varieties Selected for Next Year (FUJIAN RIBAO, 9 Sep 81)	18
-------------------------------------------------------------------------------------------	----

Guangze County Communes Build Rice Seed Base (FUJIAN RIBAO, 9 Sep 81)	20
Gansu	
Emergency Meeting on Protecting Forests (Cansu Provincial Service, 13 Jan 82)	22
Briefs	
Gansu Animal Husbandry	23
Guangdong	
Briefs	
Chemical Fertilizer	24
Commune, Brigade Enterprises	24
Sugar Production	24
Forum Held With Agronomists	25
Guangxi	
Briefs	
Agricultural Conference	26
Hebei	
Hengshui Prefecture Plans To Expand Next Year's Cotton Crop (Xu Chunlin, Jiang Qingquan; HEBEI RIBAO, 14 Nov 81)	27
Heilongjiang	
Briefs	
Hailun County Hog Production	29
Sugar Industry	29
Conference on Reclamation Work	29
Henan	
Briefs	
Cotton Procurement Quota	30
Agricultural Investigation Group	30
Peasants' Staple Food	30
Hubei	
Briefs	
Oil Procurement Quota	31
Pig-Raising Promoted	31
Good Harvests	31
Water Conservation Work	32
Hubei Grain Production Meeting	32
Grain Storage	32
Agricultural Tax Quotas	33

Hunan

Briefs

Farms Reap Profits	34
Winter Water Conservation	34
Hybrid Rice	34

Jilin

Jilin Holds Forum on Responsibility Systems (Jilin Provincial Service, 2 Jan 82)	35
-------------------------------------------------------------------------------------------	----

Briefs

Agricultural Meeting	37
----------------------	----

Liaoning

Briefs

Fresh-Water Fish	38
Rice Output	38
Farm-Product Procurement	38
Farm-Product Markets	38
Tieling Prefecture Agriculture	38

Nei Monggol

Briefs

Nei Monggol Capital Construction	39
Nei Monggol Livestock	39
Millet Procurement	39
Peasants' Income Increases	39

Qinghai

Briefs

Grain Procurement	40
Edible Oil	40

Shaanxi

Briefs

Forestry Conference	41
Vegetable Production Circular	41

Shandong

Briefs

People's Income	42
-----------------	----

Shanghai

Shanghai Suburbs Report Better Economic Situation (JIEFANG RIBAO, 11 Jan 82)	43
---------------------------------------------------------------------------------------	----

Shanxi

Dryland Farming Said Fundamental Way To Develop Agriculture (Jiao Peigui; SHANXI NONGYE KEXUE, 20 Nov 81)	45
--------------------------------------------------------------------------------------------------------------------	----

Local Rice Characteristics Described (Hou Yaowen, Liu Changshun; SHANXI NONGYE KEXUE, 20 Nov 81)	52
--------------------------------------------------------------------------------------------------------------	----

Sichuan

Briefs	
Vegetable Production Conference	55
Spring-Harvested Crops	55
Sinchuan County Buffaloes	55

Xinjiang

Scientists Research Desert Control (XINHUA, 22 Jan 82)	56
-----------------------------------------------------------------	----

Briefs	
Agricultural Zoning Conference	57
Reclamation Farms	57

Yunnan

Briefs	
Procurement Prices Increase	58
Forest Protection Meeting	58

ABSTRACTS

AGRICULTURAL EXPERIMENTS

HUBEI NONGYE KEXUE [HUBEI AGRICULTURAL SCIENCES], No 11, Nov 81 ...	59
---------------------------------------------------------------------	----

1. GENERAL INFORMATION

'RENMIN RIBAO' EDITORIAL VIEWS YEAREND DISTRIBUTION

OW202101 Beijing XINHUA Domestic Service in Chinese 1134 GMT 18 Dec 81

[Report on Renmin Ribao 18 December editorial entitled: "To Do a Good Job in Yearend Distribution is a Matter of Importance"]

[Text] Beijing, 18 Dec (XINHUA)--On 18 Dec Renmin Ribao frontpaged an editorial entitled "To Do a Good Job in Yearend Distribution is a Matter of Importance." The editorial points out: In order to carry out the yearend distribution work well, it is necessary to follow the socialist principle of correctly handling the interests between the state, the collectives and individuals. All localities should strengthen leadership over this work, have good grasp of the policy and properly handle the new situations and new problems that have emerged since various forms of responsibility systems were implemented. It is a matter of great importance that has bearings on consolidating the collective economy, stabilizing and improving the system of responsibility in agricultural production and further bringing the socialist enthusiasm of the peasants into full play.

The editorial says: The prerequisite for doing a good job in yearend distribution of profits is to make a correct check of production output as well as income and expenses. The key link in carrying out distribution well is to do a conscientious job in implementing the measures concerning contracts, rewards and reparations of the responsibility system and to make efforts to have these measures completely fulfilled. Any unreasonable terms in the original contracts should be readjusted in the contracts signed for the next year. If the quotas were not fulfilled due to some natural disaster beyond anyone's control or if the quotas of the original contracts were not fulfilled under normal conditions even though the majority of the commune members did their best, the masses' wishes should be respected and some concrete remedial measures should be discussed and worked out at a meeting of commune members or at a meeting of representatives of commune members. It is necessary to conduct education among the minority of commune members who refused to carry out the contracts of fixed quotas of output or on fixed quotas of contribution to accumulation [Bao Gan He Tong 0545 1626 0678 0681] or who failed to fulfill the procurement task but sold agricultural products, which should be turned over the collective for unified distribution, at high market prices. To maintain the dignity of the contracts, cases in which members refuse to carry out the contracts even after persuasion should be discussed by the masses and the necessary economic measures taken against them.

The editorial points out: It is necessary to further strengthen ideological education among cadres and the masses in cherishing the country and cherishing the collective. In carrying out distribution work, first of all, it is necessary to pay agricultural taxes as formulated by the policy, fulfill the tasks of unified procurement and designated procurement of both agricultural and sideline products and strive to make greater contributions to the state. The production teams that implement the contracts on "both fixed output quotas and fixed contribution to accumulation" should not refuse to repay state loans just because production relations have been partially readjusted. In deciding the amount for retention by the collective, it is necessary to proceed from actual conditions and first retain sufficient funds to guarantee simple reproduction and then arrange for funds for expanded reproduction. At production teams that have fixed prices for draught animals and farm implements and turn them over to commune members for use, all the payments collected in this concern as well as depreciation charges collected from commune members for using collective-owned properties for a long period of time should be counted as accumulation and depreciation funds and become public accumulation funds. The production costs paid by the collective should later be repaid in full by commune members. These public funds should not be divided or diverted to other purposes. As for those production teams that have either used or divided the public funds or even divided the original public accumulation funds or the state loans, it is necessary to educate cadres and the masses in correctly handling the relationship between the immediate interests and long-term interests, maintaining the production team's role as a basic economic unit, complying with contract regulations, acting enthusiastically to repay the state loans, and fulfilling the tasks assigned by the state and the quotas to be retained by the collective.

The editorial adds: It is necessary to proceed from the principle of maintaining and arousing the enthusiasm of both cadres and the masses as well as strengthening the unity between cadres and the masses, and properly handle the problem concerning allowances for cadres. It is also necessary to reasonably solve the problem concerning rewards for teachers at locally-run schools as well as for barefoot doctors in accordance with the policy concerned. It is also necessary to conscientiously carry out the policy of the party and the government concerning special care to disabled servicemen and to family members of revolutionary martyrs and servicemen, and to persist in providing food, clothing, medical care, housing and burial expenses to the households of childless, infirmed, old persons who enjoy these "five guarantees," no matter what forms of production responsibility system are being implemented.

In conclusion, the editorial says: All production teams that have achieved increased output and increased income should let the overwhelming majority of commune members receive an increased income over last year. All major problems concerning distribution should be discussed and decided at the meeting of commune members or at the meeting of representatives of commune members and plans for distribution should be worked out in a democratic way so that distribution can be carried out to the delight of the masses and to the satisfaction of the cadres.

CSO: 4007/170

NATIONAL FOREST ZONING MEETING HELD IN TAIYUAN

OW270524 Beijing XINHUA Domestic Service in Chinese 1304 GMT 25 Dec 81

[Report by XINHUA reporter Jin Jiasheng]

[Excerpts] Taiyuan, 25 Dec (XINHUA)--At a recent meeting for examining forest zoning in China held by the forestry ministry in Taiyuan, representatives from all provinces, municipalities and autonomous regions as well as some experts of the departments concerned discussed ways to effectively, thoroughly and persistently carry out the nationwide voluntary tree-planting campaign. They also presented five suggestions in this connection.

They said: Since the founding of the new China, great achievements have been made in tree-planting and afforestation in all localities. However, under the long-term influence of the "left" idea, there has been a tendency to demand uniformity in everything and to do things by fits and starts in afforestation. The result is, many newly planted trees are "green the first year, yellow the second year and dead the third year." They said: We should never again do such foolish things on the spur of the moment--things that have yielded little fruit despite great efforts and that have wasted money and manpower.

They maintained: The launching of the nationwide voluntary tree-planting campaign is a matter of tremendous strategic significance in the history of forest construction in China. Therefore, they suggested that:

1. Under the direct leadership of party committees and people's governments at all levels, all local afforestation committees should truly become permanent organs that have functions, powers and responsibilities.
2. The work of planning and designing should be stepped up.
3. Local conditions should be considered so that the right trees are planted in the right places and in a scientific manner.
4. The nationwide voluntary tree-planting campaign should be closely integrated with the comprehensive plan for harnessing the mountains and rivers and building forests, farmland and roads and with the efforts to prevent floods, protect river-banks, prevent windstorms and desertification, protect reservoirs, plant trees

along transportation lines, create a beautiful environment and reduce and eliminate pollution.

5. Propaganda work should be done well to popularize scientific and technical knowledge in forestry.

CSO: 4007/170

'REMIN RIBAO' CARRIES EDITORIAL ON LAND MANAGEMENT

0W040109 Beijing XINHUA Domestic Service in Chinese 0731 GMT 3 Jan 82

[Text] Beijing, 3 Jan (XINHUA)--Renmin Ribao today frontpages an editorial entitled: "Treasure Every Inch of Land is Our National Policy." It says that we must pay as much attention to land management as we do to the population issue; and exercise strict control over the use of arable land.

The editorial points out: Our country has a vast population, but limited arable land. This is a contradiction. This contradiction will become more and more acute following population growth and construction developments. During the 20 years between 1957 and 1977, the use of land for urban and rural construction, the discard of land eroded by natural disasters and other reasons reduced China's arable land by more than 400 million mu. Since the 3d plenary session of the 12th C.C. Central Committee, the peasants have become well-to-do with the gradual implementation of the rural economic policy. They have built a large number of houses. The commune- and brigade-run enterprises have thrived. Under such a new situation the area of arable land would further shrink if we did not strengthen land management and stress the rational use of land. In a few years, at most in a couple of decades, there would be no arable land in suburban areas of some cities and townships and those rural areas where the population is fairly concentrated. Now is a time of great urgency to pay attention to this problem.

"It is necessary to respect the rights of a commune or brigade in managing its own affairs. Communes, brigades and peasants want to use some land to build houses. Why should we interfere with them?" The editorial believes that this kind of view is erroneous. After the implementation of the production responsibility system of all forms in agriculture in China, the system of public ownership of the basic means of production (mainly the land) will never change. Commune members have the right to use private plots (hills) and farmland under contract for farming. However, they do not own the land. They are not allowed to sell or buy land, nor to let it out or illegally destroy farmland for the sake of building houses. The use of land for building houses in rural areas affects the relations between the individual and the collective, between living and production and between those who are doing business and those who are engaged in agricultural production in communes and brigades. Efforts must be made to make unified planning with due consideration for all concerned and to make rational arrangements. Any laissez-faire attitude or practice of paying attention to one side only runs counter to the long-term interests of thousands of households.

The editorial says: For nine years, there has been a tradition in our country of the major reasons is the laxity of the legal system and abuse of land-use regulations. In April last year, the State Council promulgated an "Urgent Decree on Banning the illegal use of arable land in rural areas for building houses." All localities must carry out legislative work well, and strengthen management in line keeping with their own conditions. In making use of existing housing decrets from now on, it is necessary to strictly implement the legal system of submitting applications for review and approval. No government organs, enterprises or individuals are allowed to illegally seize land for building houses or exceed their authority in approving the use of land. The suburban areas, cities and townships should exercise strict control over the seizure of arable land, and pay attention to insuring that ample land is available for growing vegetables. It is necessary to seriously deal with those who violate the legal system to obtain land to build houses, no matter who or what unit. For those involved in serious cases, everything on the land will be confiscated according to law.

The editorial points out: It is necessary to guide the housing issue onto the correct path through a unified plan. Those counties having already completed the division of agricultural districts must work out a general plan for land utilization and a plan for the use of land in houses and houses. On the basis of their natural and economic conditions, they must make unified arrangements for the use of hills and rivers and for the laying out of forests, roads and villages; and determine the layout and boundaries of a village or township. Attention must be paid to adapting measures to local conditions, to fully utilizing the shape of the hills and the terrain and to combining the long-term with immediate interests. It is necessary to map out plans well for the use of land in rural areas for building houses on the basis of the principle of practicing economy in the use of land, doing everything favorable to production and providing convenience for the people in their livelihood. In capital construction, it is necessary to strictly limit the use of land, even if it is absolutely necessary to use arable land. It is essential to work out plans to build houses with impact and rational layout and structures. It is imperative to select forms of construction and building materials according to local conditions and to build houses upwards wherever possible.

SO: 4007/170

PROBLEMS CONCERNING EARLY RICE IN SOUTH DISCUSSED

Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 11, 17 Nov 81 pp 6-7

[Article by Huang Peimin [7806 0160 3046] and Chen Jian [7115 1017]: "Several Scientific and Technical Problems of Early Rice in the South"]

[Text] To explore how scientific and technical workers in paddy rice production can better serve agricultural production in the current new situation of implementing the production responsibility system and readjusting the internal structure of agriculture in farm villages, professional workers of the Chinese Agricultural Sciences Academy and the agricultural science academies of 12 provinces (regions) and cities, higher agricultural colleges and agricultural science institutes of related regions carried out scientific and technical inspection of breeding and cultivation of early rice during the first and middle 10 days of July. They formed four regional groups--a Guangxi-Guizhou-Sichuan group, a Guangdong-Hunan-Hubei group, a Fujian-Jiangxi-Zhejiang group and a Shanghai-Jiangsu-Anhui group--went deeply into the fields to observe and discuss, and then some of the comrades gathered in Beijing for a discussion. The following is a report on the discussion of several problems related to science and technology:

I The Achievements in Breeding Paddy Rice Have Been Great, But There Is Urgent Need To Organize Cooperation To Solve the Problems

As early as the middle and late 1950's, Guangdong selectively bred such dwarf-stem high-yielding varieties as ai jiao nan te, guang chang ai, and zhen zhu ai. Later, each province bred a batch of short-stemmed superior varieties. After short-stemmed varieties were popularized, Zhejiang, Guangdong, Jiangsu and Hunan became "thousand jin provinces." At the beginning of the 1970's, hybrid paddy rice was successfully bred and again occupied a leading position in the world. The varieties successfully bred by the method of pollen cultivation presently being used have already begun to be used in production. This fully shows that the breeding of paddy rice in the southern rice regions has reached an advanced level in the world.

But for a long time, the paddy rice breeding work has neglected improvement of multiple resistance and of the quality of paddy rice varieties. Many varieties (lines) newly bred successfully during the 1970's have improved in certain properties, but in adaptability and yield they have not visibly surpassed the varieties

guangluai No 4, yuanfengzao, erjiuqing, xian feng No 1, or xiang ai zao No 9, which are planted in large areas at present. These varieties have had to "serve overtime." In many regions, especially in the extensive medium- and low-yielding regions and mountain regions, there is a lack of superior varieties. Especially lacking are breakthrough type varieties combining large flexibility in seedling age, multiple resistance, bumper harvest yield, resistance to lodging, early maturation and superior quality. The causes of this situation are: First, the present varieties are very closely related. The dwarf sources of early xian and intermediate xian mostly come from the aizinian, aijiaonan te and di jiao wu jian varieties. Intermediate geng and late geng rice varieties are mainly related to the nongken 57, nongken 58 and guihuahuang varieties. Second, the emphasis on basic work and theoretical research is insufficient. The conflicting problems of bumper harvest yield and early maturation, resistance to lodging, resistance to adversity, and superior quality still have not been solved well. Third, each unit struggles on its own, the forces are scattered, and the work is redundant. Fourth, the regional experimentation, evaluation, propagation and popularization of new varieties still lack the necessary regulations and systematic procedures and the corresponding systems of working procedures. Fifth, attention has been paid only to encouraging varieties, while emphasis on the work of other links related to the varieties successfully bred has been insufficient.

To enable our nation's paddy rice breeders to make new breakthroughs, the following tasks urgently need to be organized at present:

First, we must strengthen evaluation of the quality of the varieties and research in their application in a big way. Our nation is one of the original regions of rice cultivation in the world, the history of cultivation is long, the resources are plentiful, and up to now 40,000 to 50,000 sources of qualities of varieties have already been gathered. For example, the zhijinwujiaonian variety preliminarily settled upon by Guizhou Province has a good tolerance to cold during its heading and fruiting period, and the chaitang and hongjiaonian varieties determined by Guangxi are highly resistant to blast of rice. Hunan, Jiangsu and Guangdong Provinces have also screened and selected sources resistant to bacterial blight, rice blast and leafhopper, and they have selected materials with unique qualities such as tolerance to cold, and unique plant type, leaf type, and panicle type. Although this work has made some progress, it lacks organization, and is fragmented and scattered. It is necessary to realize division of labor and cooperation under a unified plan to strive toward overall screening, selection and determination of the present varietal resources.

Second, we must organize cooperation between units and between scientific disciplines so they can attack the problems together. At present, many provinces have begun to explore the form of organization for cooperation. Jiangsu Province has already organized a cooperative network using the regional agricultural science institutes as the bases and the provincial Agricultural Sciences Academy as the center. The breeding laboratory and the plant protection laboratory of Sichuan Province's Paddy Rice Institute have joined together to establish a "technical agreement on post responsibility" for the tasks of breeding disease resistance in paddy rice. The duties, responsibilities and rights of both parties, have been clarified, and the enthusiasm of related professional personnel has been

mobilized to solve problems cooperatively. It is now necessary to organize cooperation that spans provinces and regions as well as scientific disciplines.

Third, we must organize regional experiments with varieties well, establish a sound working system for the evaluation of varieties and the propagation and popularization of superior varieties. Regional experiments with new varieties are an important link in the breeding process. They should be organized around scientific research departments, and research in the techniques of cultivation of superior varieties must be strengthened so that superior varieties and superior methods can be popularized together. Jiangsu Province has recommended promising new varieties for experiments in high yields on "expanses of a hundred mu" through regional experiments with varieties. It has explored the method of cultivation over large areas, on the one hand, and it has combined demonstration with propagation and hastened the speed of popularization of superior varieties, on the other. This method is worth advocating. In addition, regional experiments with paddy rice varieties in the southern rice regions have continued for 10 years under the joint sponsorship of the agricultural sciences academies of the three provinces of Sichuan, Guangdong and Zhejiang and through cooperation among participating units. This has served well in production. Now, an overall summary is needed to improve the experimental methods, and at the same time the network of experimental points must be reorganized and established well so that the system of regional experiments with varieties can be perfected.

III. Hybrid Rice Must Be Developed and Scientific Research Must Be Strengthened

According to statistics of the 13 provinces (regions) and cities of the southern rice region, as of 1980, the cumulative area of planting hybrid paddy rice was over 250 million mu, producing an increase of over 26 billion jin of rice grains. But as the planting area expands, the per-mu yield has tended to drop. According to statistics for Jiangxi Province, popularization of hybrid paddy rice began in 1975. In 1976, 73,000 mu were planted, and the average per-mu yield was 718 jin. In 1980, the area reached 11,284,000 mu, and the average per-mu yield dropped to 540 jin. This shows that planting of hybrid paddy rice has definite conditional requirements, and a large amount of scientific and technical work remains to be done.

The present problem is that existing hybrid combinations mostly utilize the sterile line of "undomesticated and abortive" varieties transformed by breeding, while the restorer line mainly comes from varieties of the Philippines, Thailand and other Southeast Asian regions. The types are singular, the growth period is relatively long, and rice dwarf disease and blast of rice disease are relatively serious; a strong disease-resistant combination is lacking. With the addition of an unbound system for the propagation of superior varieties in some regions, a poor grasp of seed propagation techniques, the yield of seeds is sometimes plentiful and sometimes meager, affecting the popularization of hybrid paddy rice. Research on hybrid paddy rice at present is still at a stage of overcoming difficulties. It requires organizing cooperation among many departments and many sciences to greatly strengthen basic work and theoretical research to selectively breed new three lines and new combinations with a strong resistance to disease and that can produce high yields. Localities with favorable conditions can also continue to

develop the study of many methods of sterilization including chemical emasculation, create new sterile lines and expand the source of restorer lines, combine such research closely with ordinary breeding work, continue to selectively breed new strong and superior combinations, and explore corresponding seed propagation techniques so that such work can retain its leading role in the world.

III. Readjustment of Crop Distribution and of the Planting System Requires Scientific and Technical Guidance

Crop distribution and the planting system are major problems that affect the overall situation in agricultural production. The southern rice regions began to change single season rice to double season rice during the mid-1950's and later developed into triple cropping of double season rice (abbreviated double triple system), stimulating a relatively greater increase in the total yield of paddy rice. For example, in the Suzhou region, in 1979 the area of the double triple system constituted 75.9 percent of the area of cultivated land, and the total yield was 8.249 billion jin, an increase of 2.758 billion jin over the total yield in 1965 before popularization of the double triple system, or 50.3 percent. In ordinary years, the double triple system produces a per-mu net increase of 150 jin over double cropping rice and wheat. Therefore, the results of reforming the planting system should be affirmed, not negated completely.

At present, the debate over the double triple system is centered in some of the high-yielding regions in the Shanghai outskirts and southern Jiangsu. Because the area of the double triple system is too large, because the proportion is not appropriate, because farm work is overly burdensome, and because the seasons are short, the cost of agriculture is too high and the net income of farmers has been reduced. According to surveys conducted by the Jiangsu Province Agricultural Society, from 1975 to 1979, the annual net income from agriculture in Wuxi County (where the double triple system constituted nearly 100 percent) was 61,712,000 yuan, a drop in income of over 17.4 million yuan from that in 1966 when the double triple system constituted only 20 percent, i.e., a drop of 22.2 percent in income. In some places, the tilling layer of paddy fields became shallow, the plow pan layer thickened, and the soil became stiff and hardpan. Therefore, some regions readjusted the planting system.

The general trend during recent years has been to reduce the area of double season rice and to expand the area of intermediate rice. Under the prerequisite of insuring a steady increase in the total yield of paddy rice, the planting areas of rice and oil-bearing crops, rice and beans, rice and peanuts, and rice and corn have been appropriately enlarged. For example, Sichuan Province based its efforts on the characteristics that most of the regions planting paddy rice "have ample conditions for single season rice but insufficient conditions for double season rice" and that autumn and summer drought occurs frequently, and proposed the guideline of "emphasizing intermediate rice, actively creating conditions for planting double season rice." The area and yield of intermediate rice rapidly increased. At present, the whole province already has 31 counties and cities producing an average per-mu yield surpassing 800 jin of single season intermediate rice, including 9 counties where the per-mu yield has already reached above 900 jin. Readjustment of crop distribution also helps to change the situation

of singular food grains, stimulating overall development of agriculture, forestry, livestock production, sideline production and fishery, and increasing the income of commune members. From 1978 to 1980, Huaxian in Guangdong Province reduced the area of food grain crops by 50,000 mu and the multiple planting index dropped 30 percent, but the total yield of food grains increased by 48 million jin. It also established four bases for fruits, fresh fish, peanuts, and fragrant flowers, developed diversification, and in 1980 the per capita income was 208 yuan, an increase of 78 yuan over the per capita income in the 2 years 1979 and 1980.

At the same time, each province also strengthened the investigation and study of the planting system, explored some truly feasible ways, and provided scientific guidance during the course of readjusting the crop distribution and the planting system. For example, Zhejiang Province proposed the use of a cumulative temperature [jiwen 4408 3306] of 5,300° C as the dividing line for southern and northern Zhejiang, and an elevation of 350 meters above sealevel as the limit on elevation for planting double season rice. Jiangxi Province took rotation of double season rice and winter green manure, rape, barley and wheat and rotation of paddy and dryland rice as the direction of development of the planting system in rice fields. Hubei Province planted a season of green manure crop between double cropping rice and wheat. Some regions in Anhui, Zhejiang and Jiangsu Provinces proposed "adjusting double season crops and expanding the superior" (suitably limiting the planting area of double season rice and expanding the planting area of hybrid paddy rice). Some regions in Guangdong and Guangxi implemented rotation of paddy and dryland rice, freeing part of the water used in the rice fields for irrigation in winter when it is arid and dry, and expanded the planting of green manure crops, beans, winter flue-cured tobacco and feed crops. This has added one season of income and also solved the problem of a deficiency of organic fertilizers in rice fields, and it has become a forceful measure to promote the increased yield of food grains. A trend worth emphasizing is the reduction of the area of green manure and the dramatic expansion of the area of rape. In 1980, the area of rape-rice-rice in Anhui Province constituted 10 percent of the area of double season rice at the beginning of the 1970's, and now it has expanded to over 40 percent.

The planting system of a region is the comprehensive manifestation of the natural conditions and the social economy; it has its own rules. We must conscientiously investigate and study it, treat it seriously, and we must especially strengthen scientific research in this respect. We need to organize personnel from many sciences, such as planting, cultivation, soil fertilization, plant protection, breeding, agricultural ecology, agrometeorology and agricultural economy, to participate. The key point at present is to study and propose the principles and the scientific bases for readjusting the planting system in each agricultural ecological region, establish the planting system and planting zones for crops suitable for an overall development of agriculture in the region. The planting system must maintain relative stability to facilitate further determining the distribution of crop varieties and improvement of cultivation techniques and to favor continued increase in yield.

IV. The Strength in Studying Cultivation Is Weak; We Must Take Directive Measures To Strengthen It

The study of paddy rice cultivation in the southern rice regions has contributed greatly to stimulating increased yields of paddy rice. For example, research in

The prevention of rotten seedlings has utilized many methods of coupling in the cultivation of seedlings and the techniques of cultivating strong seedlings, reduced loss of grain seeds and improved the quality of the seedlings. Efforts have also been coordinated with comprehensive bumper harvest techniques to popularize short stemmed superior varieties and improve the multiple cropping system, thus fully developing the potential of superior varieties and the reform of the planting system to produce increased yields. In the development of hybrid paddy rice in past years, a set of techniques for cultivating high yields adapted to the characteristics of hybrid rice was studied and popularized. Many facts show that the broad masses and the leading cadres at each level urgently need scientific guidance, and scientific and technical personnel in cultivation are widely welcomed. But at present many localities still tend to neglect the study of cultivation. Research in cultivation is not listed as an important subject and is not given funds. The results of research in cultivation have not been encouraged and the strength in cultivation research is very weak. Some regional agricultural science institutes have only one or two people engaged in cultivation studies, and some have even abolished such research. The provincial agricultural science academies have not revived their scientific research forces in paddy rice cultivation to the number of people during the 1960's. Cultivation research with productive applicability and comprehensiveness is difficult. During the 10 years of upheaval, such research was severely damaged. At present, the manpower is weak and the facilities are simple and not suited to the difficult task facing them. The administrative departments of the state have asked the agricultural administrations, scientific committees and scientific associations at each level to take forceful measures to truly strengthen cultivation research work.

At present, our nation's paddy rice production has not been freed from the situation of low yields, unstable yields and imbalance. A large proportion of medium- and low-yielding regions still exist. For example, of the 11.89 million mu of rice fields in Guizhou Province, medium- and low-yielding fields constitute about 80 percent. In Jiangxi Province, low-yielding fields producing less than 500 jin per mu constitute 28.1 percent of the area of rice fields. Many comrades believe that at present, it is not appropriate to simply emphasize high yields and higher yields; we must pay more attention to the study of regions of medium yield and low yield and the many disasters in order to increase the total yield and rapidly change the situation of low yields.

In addition, according to surveys, this year, blast of rice has occurred widely in Fujian Province and other places; it is the most serious occurrence since the founding of the nation. Incomplete statistics show that 3.26 million mu have been affected by rice leaf blast and panicle neck blast diseases. It is generally accepted that the study of diseases and insect pests must not be relaxed and that breeding of multiple resistance must be placed in the forefront. At the same time, we must also strengthen the study of the incidence of diseases in a big way and improve the level of forecasting. We must take agricultural technology as the center to carry out research in comprehensive prevention and control.

'RENMIN RIBAO' EDITORIAL ON SEED SELECTION

HK211212 Beijing RENMIN RIBAO in Chinese 14 Jan 82 p 1

[Editorial: "Selecting Fine Seed Strains Is the Best Farm Investment"]

[Text] The economic effect achieved as a result of the good harvests which have been brought about by improved varieties of agricultural crops has increasingly aroused people's attention in recent years:

New hybrid strains of long grain rice have been popularized over a total of 330 million mu of farmland for the past 6 years, and the average yield per mu has increased by more than 100 jin:

The economic effect achieved as a result of the good harvest which has been brought about by our having planted No 1 Taishan wheat throughout the country for a year was 333 times the total breeding investment;

For every yuan invested in breeding No 7 Ningyou rape there was an increase yield of 190 yuan;....

In his report given at the fourth session of the Fifth NPC, Premier Zhao Ziyang spoke highly of the function of fine seed strains: "The cultivation and popularization of some improved seed strains has often yielded economic returns in scores or even hundreds of times the cost of research on them. This has fully demonstrated the power of intellectual investment in scientific research." A wealth of facts have proved: The selection and popularization of fine seed strains is a measure to increase agricultural yield which requires little investment, is low in energy consumption and high in economic effect. It should be listed as an important scientific research item that will speed up the development of agriculture.

After 30-odd years of hard work, good results have been achieved in the selection and popularization of fine seed strains in our country. Breeding methods have developed from selection and introduction to hybridization, utilization of the advantages of crossbreeding, germination, pollination breeding and other such methods. Breeding targets have gradually developed from purely stressing raising output to strengthening the products' resistance to disease and adverse weather conditions and to improving quality. Breeding crops have developed from rice, wheat, cotton and other such crops to 41 types of crops including other grain crops and oil-bearing and sugar-bearing crops, hemp and tobacco. There are in

all over 3,000 new varieties of products which have been bred and put under cultivation. In recent years, there have been successively set up seed companies (stations) operated by the central, provincial, prefectural and county authorities and, in 320 counties, they have trial points for carrying out seed production specialization, processing mechanization, quality standardization, product zoning and organizing seed supply with the county as a unit. They have turned over a new leaf in the raising of the output and quality of fine seed strains and the speeding up of the popularization of the breeding of fine seed strains. Now, in the wake of the universal implementation of the production responsibility system, the peasant's need for fine seed strains is even more urgent. This calls for a strengthening of cooperation on the national agricultural technology front in pooling efforts to achieve scientific and technological breakthroughs and to aim at the selection and popularization of more and better fine crop strains within a shorter space of time.

The readjustment, setting up and amplification of breeding and popularization organizations according to agricultural zoning and crop distribution is an urgent need, if we are to do a good job of seed work. In our country, breeding teams have the most members among the agricultural technology teams. The proportion of high- and middle-level technical personnel is larger. As far as research power and experimentation methods go, they have already achieved a certain scale and standard. However, compared with certain economically developed countries, they are still rather backward, especially in the overlapping of government institutions, and the fact that each organization acts independently which dissipates their overall strength and is unfavorable to the organizing of forces to overcome difficulties. The seed organizations have had their share of ups and downs. Now, for the first time, they have achieved some degree of stabilization. However, because of a shortage of equipment and a lack of funds, they still have been unable to adapt themselves to the needs of production development. To this end, we must first carry out a rational readjustment of the arrangement of research organizations, change the situation of "small and complete" and, according to the basic conditions of agricultural zoning, crop distribution, resource characteristics and breeding units, gradually form research centers for main crops in the various ecological zones, so that breeding work will no longer be dissipated, but suitably centralized, and the departments will no longer act independently, and organization will be unified. Second, modern breeding work involves comprehensive research into many branches of science. We need to coordinate statistical information on genetics, cultivation, plant protection, soils, fertilizers, biochemistry, climate and organisms and also with specialized research branches. Only by organization, close cooperation, making contracts and laying down the rights, responsibilities and interests of each of the cooperating parties in no uncertain terms can we bring the initiative of all parties into full play. Third, the popularization of seed breeding is a science. Only by setting up and amplifying seed companies at all levels, strengthening the breeding and popularization of fine seed strains and reducing the production, supply and sale of seeds into a single and complete system can we gradually bring about a situation where seed work is carried out in a specialized way and on a social scale, and seeds are managed like commodities.

As far as the breeding and popularization of agricultural crops are concerned, we must closely integrate these with agricultural production and strive to realize the modernization of agriculture. We must, in accordance with the present needs

of production and the long-term needs of development, carry out overall planning and unified arrangement. At present, we should focus our efforts on the following: At the same time while continuing to supply varieties of products that meet the needs of increased output in high-yield areas, we must pay attention to the selection and popularization of varieties which increase the output of middle- and low-yield areas. We must tackle the actual conditions brought about by natural disasters and select and popularize an improved batch of crops which are resistant to drought, cold, wind, salinity and pests. We must, in accordance with the needs of promoting the people's health, select and popularize edible crop products which are higher in protein, lysine and other such nutrients and which are palatable, we must improve, in accordance with the needs of the operation of harvesting machinery and processing technology, the quality of industrial crops. We must have a wider field of vision, paying attention to both the breeding of fine strains of agricultural crops and the breeding of fine strains of crops grown in hilly areas, pasturelands and marshes; at the same time while grasping fine seed strains of grain, cotton and oil-bearing crops, we must also grasp well the breeding and popularization of various fine strains of jute, silk, tea, sugar, vegetables, tobacco, fruit, herbs and others in order to serve the development of diversification, intensive land use and the improvement of the composition of foodstuffs.

Seeds are the core of plant life and are controlled and influenced by the natural environment and production conditions. Selection, breeding and popularization must be carried out under certain favorable conditions. Fine seed strains found in one given place can always be poor seed strains in another given place. Therefore, in selecting, breeding and popularizing fine seed strains, we must work in accordance with the actual and objective conditions. We must not promote subjectivism or repeat the mistake of blindly exchanging seed strains. Whenever a fine seed strain is bred, it is necessary to examine the adaptability of the seeds in different areas to ascertain the most favorable conditions and the types of areas that are suited to their growth. We should not popularize the growing of these fine seed strains before examining the state organizations responsible for the examination of fine seed strains. The departments concerned must, by means of demonstrations and popularization, help the peasants to understand the characteristics of the fine seed strains, the technology needed to grow them, the necessary management method, measures to prevent pests and diseases, and the method of the rational consumption of fertilizers and water. We can smoothly popularize the growing of fine seed strains only by popularizing good methods as well. Thus, we will be able to increase production and get better results. In order to improve the breeding and popularization of fine seed strains, we must promptly start to lay down laws governing seeds.

The selection and popularization of fine seed strains is one of the main methods for improving agricultural yield. Party and government organizations at all levels must strengthen leadership, implement correct policies, vigorously arouse the initiative of the technicians engaged in agriculture and the enthusiasm of the masses, work with concerted efforts and make better use of and give play to the potential of fine seed strains in increasing yield.

NATIONAL

BRIEFS

PRC CROP STRAINS--Beijing, 14 Jan (XINHUA)--Since national liberation, much progress has been made in breeding new crop strains in China. More than 3,000 strains of the new crop seeds developed in various localities have been used in production in varying degrees. The "Shaanxi 401" and the "68--1," two new cotton strains, are highly disease-resistant and lodging-resistant. Several new rice strains, such as "Aijiaonan special" and "Guangchangai," have increased rice output in some areas from 400 to 700 or even 1,000 jin per mu. The "Lumian No 1," another highly productive cotton strain developed in Shandong Province, has been popularized widely throughout the country. The area planted to this strain has reached 18 million mu. Much success has also been achieved in breeding hybrid wheat, rapeseed, potato, beet and vegetable strains. [OW201327 Beijing XINHUA Domestic Service in Chinese 1133 GMT 14 Jan 82]

CSO: 4007/170

BRIEFS

HANSHAN COUNTY GRAIN PRODUCTION--Hanshan County, Anhui, has reaped bumper harvests for the last 2 years. In 1981 it sold 101.22 million jin of grain to the state. The country's grain department estimates that 120 million of grain may be procured and sold to the state this year. [OW201339 Hefei Anhui Provincial Service in Mandarin 1100 GMT 18 Jan 82]

BOXIAN COUNTY GRAIN OUTPUT--Boxian County, Anhui, produced 694.52 million jin of grain last year, an increase of 9.2 percent over 1980. Last year, Boxian's total income from developing a diversified economy was 155 million yuan, or 55 percent of the county's total farm income. [OW201339 Hefei Anhui Provincial Service in Mandarin 1100 GMT 19 Jan 82]

CSO: 4007/170

DISEASE-RESISTANT RICE VARIETIES SELECTED FOR NEXT YEAR

Fuzhou FUJIAN RIBAO in Chinese 9 Sep 81 p 1

[Article: "The Whole Province Selected 34 Disease-Resistant Early Rice Varieties; These Varieties Have Good Disease Resistance, Stronger Resistance to Cold; the Quality of Rice Is Good, the Rice Fruiting Percentage Is High, the Yield Is Relatively High and Stable"]

[Text] All localities in our province broadly carried out activities to evaluate and select disease-resistant early rice varieties before the summer harvest this year. According to recent statistics, the whole province has evaluated and selected 34 disease-resistant and disease-tolerant varieties to provide a material foundation for a bumper harvest of early rice next year.

Before the summer harvest this year, the provincial Agricultural Department held a meeting of agricultural specialists, managers and municipal seed companies at each locality, and plant protection station chiefs. They studied the work of evaluating and selecting disease-resistant and high-yielding superior varieties of early rice. Later, nine localities and cities in the province and most of the counties and brigades held meetings to evaluate and select disease-resistant, high-yielding and superior early rice varieties. Over 15,000 leading cadres at each level, agricultural technicians and farmer technicians participated in the selection and evaluation activities. They selected superior varieties that were suitable for planting from over 120 early rice varieties; for example, gui fu No 3 and wen xuan 6, that are suitable for planting in the eastern regions of Fujian; zheng hong 17 and long shuang hong, which are suitable for planting in southern Fujian; and hong yun 33, ke jing 63-1 and wen xuan ging, which are suitable for western and northern Fujian. The main advantages of these varieties are as follows: First, their disease resistance is good. Very few of them became diseased during the very severe epidemic of rice blast this year. Second, their resistance to cold is strong. Third, the quality of rice is good, the rice fruiting percentage is relatively high. Fourth, their yield is relatively high and stable. For example, the 77-175, ke fu hong No 2 early rice planted on more than 20,000 mu this year in Longyan Prefecture manifested disease resistance and high yields; in general the per-mu yield reached 700 to 800 jin, with a high of 1,050 jin. Ningde Prefecture planted qing gan huang early rice over 60,000 mu this year and also realized a better harvest. In general, the per-mu yield was 700 to 800 jin, with a high of 1,000 jin, an increase of over 10 percent in yield over the hong line varieties that are easily affected by disease, and the quality of rice is relatively good.

To adapt to the need for renewing and replacing early rice varieties in our province next year, many localities have used the method of reverse planting in spring, and hastened the propagation of hong yun 33, ke fu hong and such varieties over more than 100,000 mu. The state also procured an additional 2.56 million jin of these superior seeds.

(Li Changda [2621 1603 6671] of the provincial seed company)

9296
CSO: 4007/132

GUANGZE COUNTY COMMUNES BUILD RICE SEED BASE

Fuzhou FUJIAN RIBAO in Chinese 9 Sep 81 p 1

[Article: "Guangze Implemented Method of Providing Seeds by the Commune; Early Rice Realized Bumper Harvest; a Conference To Exchange Experience in Building Seed Bases by Communes and Brigades in 13 Southern Provinces Was Held in the County"]

[Text] Guangze County implemented the method of uniform supply of seeds by the communes. This year, although the area of early rice was smaller and the county encountered various natural disasters, every commune increased the yield, every brigade realized bumper harvests, and the per-mu yield and total yield both registered increases over last year.

Guangze County did not have a superior seed base in the past. Each year, it had to import a large amount of rice seeds from other regions. There were many different seeds, the seeds were mixed and impure, and at the same time, bacteria were easily imported. To improve the backward situation in seed management work, in 1977 the county began to build a commune seed base. After 3 years of effort, all of the county's seven communes established superior seed farms covering more than 11,000 mu, constituting 6 percent of the area of cultivated land of the whole county. Last year, they produced over 2.15 million jin of seeds and supplied 1.89 million jin of seeds for production, basically satisfying the need for seeds by the whole county.

The seed bases of each commune insured the availability of seeds, changing the past situation of transferring and shipping large amounts of seeds and of having many different kinds of seeds, mixed seeds and impure seeds.

Renewal and replacement with superior seeds were also carried out quickly, the quality was insured and increased yields were visible.

Because the seed bases propagate and supply superior seeds, this year Guangze County replaced the varieties on more than 52,000 mu during the early season, constituting 85 percent of the area of early rice, and basically, blast of rice did not occur. It also planted over 14,000 mu of second-generation original seeds, such as the variety ke jing 63-1 of good intermediate maturity. After this year's propagation of superior seeds, the plantings expanded from last

year's 820 mu to 12,000 mu. The use of other varieties, *gui fu* No 3 and *xia cao zao*, which are suitable for growth in the locality and which have a high yield, was also expanded to cover more than 28,000 mu, thus correspondingly lessening the planting of *hong si* line varieties which are easily affected by disease. The whole county's early rice basically was not affected by blast of rice.

Each commune in Guangze County established a seed base. Throughout the whole county, seeds were provided by the communes, and this was praised by the concerned departments and each locality. A conference on the exchange of experience in constructing seed bases by communes and brigades in 13 southern provinces was held in Guangze County this year, and participants evaluated the method highly after field observation.

(Staff reporter Guo Xunan [6753 8113 1344] and Chen Deren [7115 1795 0088] of the Guangze County reporting group).

9296
CSO: 4007/132

GANSU

EMERGENCY MEETING ON PROTECTING FORESTS

SK140637 Lanzhou Gansu Provincial Service in Mandarin 1125 GMT 13 Jan 82

[Text] According to GANSU RIBAO, the Provincial People's Government recently called an emergency meeting on protecting forests in Linxia, urging governments at all levels to step up leadership and firmly stop deforestation.

The meeting pointed out: Many localities in our province have failed to earnestly implement the state's policy on forestry. Some localities give secret support to reckless deforestation. Consequently, illicit and disruptive deforestation has become serious again. After discussions, the meeting worked out a seven-point measure on protecting forests.

1. Conscientiously raise the understanding and leadership of party and government organs at all levels over forest protection work.
2. Draw boundary lines for forest areas as quickly as possible.
3. Take immediate action to investigate deforestation cases. Criticism and education, disciplinary sanctions, financial compensation and legal sanctions should be applied in dealing with these cases.
4. Resolutely close down timber fairs in forestry areas and adjacent counties. Black marketeering of timber should be banned.
5. Improve management and transportation of timber and reorganize timber check-posts.
6. Decide to establish two joint committees for protecting forests, one covering Ganna, Linxia and Dingxi prefectures, the other covering eight counties in Gannan and Wudu prefectures.
7. Forestry departments should strictly fulfill their functions and responsibilities and take the lead in implementing forestry policy.

The meeting called on prefectures and counties concerned, forestry departments and the various localities throughout the province to examine and compare with one another their forest protection work and to conduct extensive [work] on cherishing and protecting forests.

CSO: 4007/171

GANSU

BRIEFS

GANSU ANIMAL HUSBANDRY--In 1981, Gansu Province scored good achievements in animal husbandry. The number of draft animals increased by 2.3 percent and sheep increased by 2.6 percent compared with 1980. The number of hogs slaughtered and marketed increased substantially. The procurement plan of wool, camel wool, eggs and meat was overfulfilled ahead of schedule. Households specialized in raising livestock increased from 270 at the beginning of 1981 to 24,000 at the end of 1981. [SK032235 Lanzhou Gansu Provincial Service in Mandarin 1125 GMT 2 Jan 82]

CSO: 4007/170

BRIEFS

CHEMICAL FERTILIZER--Guangdong Province fulfilled the 1981 production quota for chemical fertilizer ahead of schedule. By 20 December the province had produced 631,000 tons, overfulfilling the year's plan by 1.5 percent. This represented a 4.2 percent output increase over the corresponding period of 1980. Production of nitrogenous and phosphatic fertilizer rose by 2.7 percent and 9.2 percent respectively. [Guangzhou Guangdong Provincial Service in Mandarin 1000 GMT 1 Jan 82]

COMMUNE, BRIGADE ENTERPRISES--Commune and brigade enterprises in Guangdong Province have been developing in the course of readjustment. According to an estimate made by all places, the total income of all commune and brigade enterprises throughout the province this year may reach some 4.96 billion yuan, some 800 million yuan more than in 1980. The total income of the commune and brigade enterprises in Foshan Prefecture in 1980 came first on the list and that prefecture is still in first place this year. It is estimated that the total income of the commune and brigade enterprises in Foshan Prefecture may reach some 1.78 billion yuan, 29.9 percent more than in 1980. Commune and brigade enterprises in Shaoguan Municipality originally developed relatively slowly but this year have caught up with others which developed quickly. Production of construction materials, domestic electric appliances, garments, shoes, hats and furniture which people urgently need has greatly increased. Production of medium-size and small agricultural tools is improving. This year and last, the Foshan Prefectural Administrative Commissioner's Office appropriated a total of 7 million yuan to help communes and brigades establish joint enterprises. Thus, the number of joint enterprises throughout the prefecture has increased from some 470 last year to 1,426 this year. Meixian Prefecture has set up 1,680 economic complexes, which have played an important part in developing commune and brigade enterprises. Hainan administrative region now has some 1,300 tropical crop farms which are run singly or jointly by communes and brigades. By the end of last year, the region was cultivating tropical crops on 1 million mu, accounting for 77 percent of the total area of tropical crop fields. [Guangzhou Guangdong Provincial Service in Mandarin 1000 GMT 27 Dec 81]

SUGAR PRODUCTION--Guangdong has produced 1.1 million tons of sugar in 1981, which is an all-time record. In the past few years, Guangdong had readjusted agricultural planning and encouraged the peasants to plant sugarcane. In 1981, the area for growing sugarcane amounted to 3.1 million mu, an increase of some 700,000 mu over 1980. The sugar industry has for the first time consumed more than 100 million tons of sugarcane, which is over 30 percent more than in 1979 and also an all-time record. To meet the needs of the new situation, Guangdong has newly established

and enlarged 21 sugar refineries, increasing the refining capacity by 9,000 tons per day. In 1981, the sugar refineries started refining 10 days earlier than in previous years. Since the beginning of the refining season in 1981, the production of sugar in the province has been steadily increasing and the output of sugar in 1981 has for the first time amounted to 1.1 million tons. [Beijing ZHONGGUO XINWEN SHE in Chinese 0755 GMT 6 Jan 82]

FORUM HELD WITH AGRONOMISTS--Ren Zhongyi, Liu Tianfu and other leading comrades of the Guangdong Provincial CCP Committee and People's Government paid a visit on agronomists in the Provincial Institute of Agronomy yesterday afternoon, and held a forum with them. At the forum, Comrade Ren Zhongyi emphatically pointed out that importance must be attached to the improvement and import of fine varieties of grain. He said, the modernization of agriculture demands the popularization of fine varieties. Fine varieties must be bred or imported and popularized in accordance with the local conditions. On the other hand, we should learn advanced cultivation techniques from other places in the country and abroad while trying our best to develop new techniques of our own, then popularize them according to the local conditions. We should also facilitate the practice of agricultural technology in observing the natural law and summing up useful experiences in the field. We should carry out the system of integration of specialists and the masses, while giving full play to both professional and amateur agronomic personnel, so as to form an agricultural technology network. Thus, we will be able to make improvements and continue progressing. Comrade Ren Zhongyi encouraged all people to work together with one heart to bring about an upswing in agronomy and make 1982 a better year than 1981. In replying to the demand of the agronomists for doing away with the difficulties existing in work and livelihood, the leading comrades of the provincial CCP Committee and people's government promised to improve the situation step by step. [Text] [HK221500 Guangzhou Guangdong Provincial Service in Mandarin 2330 GMT 21 Jan 82]

CSO: 4007/171

GUANGXI

BRIEFS

AGRICULTURAL CONFERENCE--The Guangxi regional conference on agriculture and animal husbandry was held from 9 to 12 December in Nanning. The conference pointed out that we should place the study of science and the popularization of agricultural science and technology on the agenda of the agricultural departments at all levels and actively publicize the practice of contract and responsibility systems for agriculture and animal husbandry. The conference also discussed the question of training technical and management cadres for agriculture and animal husbandry. [Nanning Guangxi Regional Service in Mandarin 1100 GMT 19 Dec 81]

CSO: 4007/171

HENGSHUI PREFECTURE PLANS TO EXPAND NEXT YEAR'S COTTON CROP

Shijiazhuang HEBEI RIBAO in Chinese 14 Nov 81 p 1

[Article by staff reporter Xu Chunlin [1776 2504 2651] and Jiang Qingquan [5592 3237 3123]: "Freed From Leftist Confinement, Daringly Adjusting the Crop Distribution. Hengshui Prefecture Determines That Next Year's Cotton Fields Will Be Expanded Onefold"]

[Text] Recently, the leadership at each level in Hengshui Prefecture started out from the actual situation of the prefecture to adjust the crop distribution and determined to expand the area of cotton planted from this year's 700,000 mu to 1.4 million mu next year through criticizing the left, criticizing the mistakes of the former responsible persons of the provincial committee and by going to Shandong to observe and learn, thus liberating ideology and freeing themselves from the confines of "taking food grains as the key link."

Hengshui Prefecture has a lot of lowlands and saline and alkaline land. The production conditions are relatively poor and the yield of food grains is low and unstable, but the soil and climate are suitable for planting cotton. To implement the spirit of the directive issued by the leading comrades of the Party Central Committee and the party committee concerning the development of cotton production, the committee of the prefecture and the administrative office held several cotton production meetings, and the main responsible persons of the committee of the prefecture and the administrative office led the participating comrades to Shandong's Xijin, Pingyuan and Woxian and Wuqiao Counties to observe and learn; there, they realized more fully that planting additional cotton is the essential road for Hengshui Prefecture to free itself from the long period of "three dependencies" and to eliminate poverty and become rich; they became clearly aware that the guideline of agricultural development for the whole prefecture is: to grasp food grains and cotton together, with key emphasis on grasping cotton; to use cotton to stimulate food grains and to use food grains to preserve cotton. The clarification of the guideline stimulated the people's enthusiasm to work. The original plans for less planting have now been changed to more planting. The original plans for not planting have now been changed to plans for planting. Zaoqiang County is an old cotton region; historically it was called "silver Zaoqiang." The original plan was to plant 110,000 mu of cotton next year, but now it has been decided to develop the superiority of "silver Zaoqiang" and the cotton fields have been increased to 250,000 mu. The three counties Hengshui, Wuyi and Wuqiang originally were not cotton planting counties. Now, arrangements have been made

suiting measures to local circumstances, and the planting of over 250,000 mu of cotton is planned. The original plan called for the planting of 1.2 million mu of cotton in the whole prefecture, although each county considered that this could not be managed; now, each county's enthusiasm is high, the planting of 1.4 million mu next year has been insured, they are striving to plant 1.75 million mu, and the total yield of ginned cotton could reach 800,000 dan.

To do a good job of changing the situation of cotton around next year, the following measures were implemented: First, the two key links of contracting work and awards in the cotton production responsibility system were solved well. One measure taken was to actively implement unified management and contract work to the family. The second measure was to ask those practicing linking production to laborers not to set the production quotas too high and to advocate full rewards and full punishment. Second, the level of scientific planting of cotton was improved. Next year, the whole prefecture will popularize "lu mian No 1" in a key way and at the same time keep its own superior variety "heng mian No 1." Each level of the prefecture, the county and the commune will hold training classes in cotton planting techniques this winter and next spring, and will carry out propaganda for scientific techniques in many ways, basically achieving the goal that every cotton planting commune member learn several key techniques. At the same time, there is a plan to introduce more than 400 technical personnel from Shandong to provide technical guidance and to quickly cultivate and establish a scientific and technical team in cotton production and prepare other materials well. Third, the leadership will be strengthened, and cotton production will be included on the daily agenda of important business. The heads and deputy chiefs of the party and government at each level will personally grasp the work, and at the same time, will establish a cotton production leading group to be led by the leading comrades of the government at each level. A deputy will be assigned to grasp the work full time and to invite concerned departments to participate. In addition, a cotton techniques advisory group will be established in order to form a cotton production line from the prefecture to the brigade.

9296
CSO: 4007/132

BRIEFS

HAILUN COUNTY HOG PRODUCTION--Hailun County in Heilongjiang procured 98,000 head of hogs and sold 67,000 head in 1981, ranking first in the province. [SK171033 Harbin Heilongjiang Provincial Service in Mandarin 2200 GMT 15 Jan 82]

SUGAR INDUSTRY--Heilongjiang Province's 23 sugar refineries have a daily sugar processing capacity of 15,000 tons and can produce 380,000 tons of beet sugar annually, thus constituting China's biggest beet sugar producing base with a complete system of beet sowing, procurement, transport and processing. The provincial sugar refining capacity increased from 250,000 tons in 1979 to 300,000 tons in 1980 and to 380,000 tons in 1981. [Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 6 Jan 82]

CONFERENCE ON RECLAMATION WORK--According to our sources, the recent provincial work conference on farm mechanization and planned reclamation stressed that it is necessary to strengthen leadership over this work and reclaim new areas in a proper manner. However, reclamation plans and regulations must be strictly observed to avoid blind reclamation. When reclaiming wastelands, it is necessary to use mechanized instruments and equipment and to build anti-flood projects. The conference pointed out: Because the state financial capacity is limited and most reclaimable land in our province requires construction of water drainage projects, communes should mainly reclaim land where reclamation has already begun, and reclamation of new areas should be conducted in a proper manner. This year the province plans to reclaim 600,000 mu of land. In general, there will be no additions from new reclamation areas. Each unit of reclaimed land should be 2,000 to 3,000 mu. While conducting reclamation, it is necessary to select a site where soil quality and terrain are good, where the land is flat, uninterrupted and will not flood, and where no supplementary social projects are needed. To this end, the conference demanded: All localities should implement reclamation tasks. Prefectures and counties should organize capable personnel to implement reclamation tasks by grassroots units. It is necessary to rationally utilize land and other natural resources in line with agricultural divisions. It is strictly forbidden to destroy forests, grasslands and pools while reclaiming land. Natural resources should be protected in order to create conditions for developing a diversified economy. [Excerpt] [SK170948 Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 16 Jan 82]

CSO: 4007/171

BRIEFS

COTTON PROCUREMENT QUOTA--Henan Province has overfulfilled the cotton procurement quota for 1981. Up to 15 December, the province had procured a total of 562.82 million jin of cotton, which was 102.33 percent of the year's procurement quota. Since the province has seriously implemented the state's cotton procurement policies, the enthusiasm of the masses was enhanced. Proceeding from promoting the building of the four modernizations and the production of cotton, all cotton procurement departments tried every possible way to make marketing of cotton convenient for the people. Thus, the procurement of cotton was sped up. [HK160422 Zhengzhou Henan Provincial Service in Mandarin 1100 GMT 22 Dec 81]

AGRICULTURAL INVESTIGATION GROUP--The Henan Provincial Agricultural Committee, the Provincial Science and Technology Committee and the Provincial Science and Technology Association recently organized an investigation group to conduct investigation in Xinxiang, Anyang, Kaifeng, Shangqiu, Zhoukou and Zhumadian prefectures for 43 days, starting on 23 September to speed up agricultural development. The investigation group comprised some 20 experts and scholars in soil, water conservation, agriculture, forestry, animal husbandry, horticulture and sericulture. It conducted investigations in an area covering some 8,000 li and held that the situation of the rural areas in our province had been excellent since the third plenary session. However, the cultivated land in the Huang-Huai-Hai Plain is infertile and suffers from windy weather and floods and we have not basically changed the situation of the low yielding land. The investigation group put forth five suggestions: 1. We must promote the diversified economy. 2. We must actively readjust the structure for agriculture and promote the development of sideline production. 3. We must attach importance to promoting afforestation. 4. We must do a good job of managing farmland capital construction. 5. We must set up a systematic system to publicize agricultural science and technology to the peasants. [HK130825 Zhengzhou Henan Provincial Service in Mandarin 1130 GMT 14 Dec 81]

PEASANTS' STAPLE FOOD--Zhengzhou, 8 Jan (XINHUA)--The food structure of peasants in Henan Province has undergone a significant change following the implementation of various systems of responsibility in production. Sweet potatoes, which used to be the main staple food for peasants in Henan, has been replaced by wheat flour. The area of farmland planted with sweet potatoes has been reduced from over 20 million mu in the past to about 10 million mu now. Per capita distribution of wheat for peasants has been increased from some 60 jin in the past to 220 jin in 1981. A considerable number of peasant households now reap more wheat in a season than they can consume in a year. [OW111107 Beijing XINHUA Domestic Service in Chinese 0103 GMT 8 Jan 82]

CSO: 4007/171

BRIEFS

OIL PROCUREMENT QUOTA--By 15 December, Hubei Province had procured 1.25 million dan of oil, stored it in warehouses and overfulfilled its procurement quota by 50,000 dan. The amount of oil procured this year was double that of last year and was 170,000 dan more than in 1979, which was a big bumper harvest year. According to incomplete statistics, in Jingzhou Prefecture, some 3,300 households each sold more than 500 jin of sesame to the state and some 2,000 households each sold over 1,000 jin of sesame and in Xiaogan Prefecture, approximately 2,000 peasant households each sold more than 200 jin of oil to the state. Enshi Prefecture which originally was short of oil has not been short of oil since 1978. This year it sold more edible oil to the state than any other prefecture. [Wuhan Hubei Provincial Service in Mandarin 1100 GMT 27 Dec 81]

PIG-RAISING PROMOTED--The Provincial CCP Committee and People's Government recently issued a decision on stepping up pig-raising and procurement work to meet the needs of the development of the national economy and the people's daily life. The decision demanded that the province continue to implement the principle of simultaneous promotion of public and private pig-raising, with the emphasis on private. Collective pig-raising should also be vigorously promoted. State farms and labor education farms must also work hard to develop pig-raising. The decision noted: There is no change in the state policy of providing fodder as a reward for selling porkers. Those peasants who have been allocated fodder plots must raise pigs. Those who do not must sell an equivalent amount of grain from their plots to the production teams. If they persistently fail to raise pigs, their fodder plots will be withdrawn. Pig procurement quotas for households will not be changed for 3 years. After fulfilling their procurement quotas, pig-raising households can dispose of their pigs as they like. If they sell them to the state, they will be rewarded with fodder grain. Those who do not fulfill their procurement quotas are not allowed to sell pork in the rural markets. Organs, bodies, enterprises and so on are not allowed to buy pigs in the rural areas. [Wuhan Hubei Provincial Service in Mandarin 1100 GMT 5 Jan 82]

GOOD HARVESTS--Hubei has reaped a good agricultural harvest this year despite natural disasters. The total grain output has increased by 10 percent over last year although the growing areas were some 700,000 mu less than the previous year. The total cotton output has increased by 11 percent over last year and the total output of oil crops was over 70 percent more than the highest record scored in 1979. The output of the main items of the diversified economy has increased by a large scope. The major reasons for the province to reap a good harvest were that

the CCP committees and the people's government at all levels had further strengthened leadership over forestry production, implemented the party's rural policies and strengthened and perfected various forms of agricultural production responsibility systems, so that the peasants' enthusiasm to fight against natural disasters and to strive for a bumper harvest was enhanced. Furthermore, the province has introduced scientific farming methods and scored good results in fighting plant diseases. [HK150623 Wuhan Hubei Provincial Service in Mandarin 1100 GMT 19 Dec 81]

WATER CONSERVATION WORK--In the future, Hubei Province must shift the focus of water conservation work from construction to management. After 30-odd years' construction, this province now has a fairly solid water conservation foundation. It now has some 6,200 large and small reservoirs and some 10,000 drainage and irrigation pumping stations. Small rural hydroelectric power stations have appeared all over the province. These water conservation facilities have played an active part in agricultural production and fighting natural disasters. However, in the past water conservation work, the province laid stress only on construction and disregarded rounding off and management of existing projects, resulting in its being unable to make the most of many water conservation projects. Although the embankments of the Changjiang River and the Hanjiang River are some 8,000 kilometers long, a very large part of them has not been reinforced. Although the province has many reservoirs and pumping stations, the antiflood standard of many reservoirs is low, rounding off of many existing reservoirs has not been carried out, only a small number of reservoirs can be utilized and many pumping stations have not been completed. The province has not made the most of these pumping stations and reservoirs. If the province steps up rounding off of these existing projects and strengthens scientific management of these projects, the benefits of these projects will greatly increase as if the province had built a large number of new water conservation projects. Therefore, in the future, the province must strictly limit the number of new projects and lay stress on management and utilization of the existing projects. [Wuhan Hubei Provincial Service in Mandarin 1100 GMT 27 Dec 81]

HUBEI GRAIN PRODUCTION MEETING--The Hubei Provincial People's Government recently held a conference on signing contracts for the production of grain, edible oil and other foodstuffs. Vice Governor Lin Shaonan conveyed the spirit of the national conference on grain production and gave a speech on contracts for the purchase, selling and allocation of provincial grain and edible oil products, and on contracts for financial management in grain and edible oil production. The conference requires various localities after being assigned their production tasks to sign 3-year contracts. Vice Governor Tiang Ying gave the summing up report. He stressed the importance of leadership and called for firmly grasping the following five tasks: planting, harvesting, purchasing, selling and reserving. He said that in agricultural production, it is necessary to persist in planned economy. The fields in this province for growing grains should be no less than 80 million mu. [Wuhan Hubei Provincial Service in Mandarin 1100 GMT 14 Jan 82]

GRAIN STORAGE--The amount of grain stored up in granaries in Hubei by 10 December was 5.056 billion jin, which was 92.4 percent of the year's grain procurement quota. Enshi, Xiaogan and Xiangyang prefectures and Shashi Municipality have already fulfilled the procurement quota and 20 counties have fulfilled and overfulfilled

the grain procurement quota. At present, party organizations at all levels are further strengthening their leadership over all work so as to do a better job of procurement work. [Wuhan Hubei Provincial Service in Mandarin 1100 GMT 16 Dec 81]

AGRICULTURAL TAX QUOTAS--Up to now, Hubei Province has stored 1.89339 billion jin of grains in granaries and overfulfilled the year's agricultural tax quotas ahead of schedule. Of the 14 prefectures and municipalities, 12 have stored grain into granaries earlier than in previous years. There are three reasons for the province having done a good job of collecting agricultural tax. First, the peasants' enthusiasm has been enhanced since the production responsibility system was implemented; as a result, agricultural production was greatly enhanced. Second, we have seriously implemented the policy of agricultural taxation and suitably handled the relations among the state, the collective and the individual. Third, we have done a good job of reducing the agricultural tax. [Wuhan Hubei Provincial Service in Mandarin 1100 GMT 23 Dec 81]

CSO: 4007/171

BRIEFS

F FARMS REAP PROFITS--In 1981, profits reaped by state farms in Hunan Province amounted to 20 million yuan, an increase of nearly 300 percent over 1980. Major economic targets, such as total output value and profits of agricultural, industrial and sideline products, per capita output value and worker's income, all hit an all-time high. As a result of the implementation of the production responsibility system in 1981, workers' enthusiasm for production was aroused. Farms which used to be running at a loss began to make profits. In 1980, only 47 out of a total of 23 agricultural enterprises in the province were making a profit. In 1981, the number increased to 68. [Changsha Hunan Provincial Service in Mandarin 1100 GMT 1 Jan 82]

WINTER WATER CONSERVATION--HUNAN RIBAO carried a short commentary on the frontpage of its 26 December issue urging the peasants to do a good job of winter water conservation construction. The short commentary said: As a whole, the water conservation work has not made much progress this year and there has been a shortage of labor. There is only 1 month left before the spring festival and, "we must grasp this time to do a good job of winter water conservation. The key for a steady growth of agricultural production lies in promoting farmland capital construction, improving the conditions of agricultural production and steadily enlarging farmland to ensure stable yields despite drought or excessive rain. Experiences in many prefectures have shown that this year's winter water conservation construction will be completed on time provided that the leaders attach importance to it and adopt effective measures. All localities should seize the favorable conditions and speedily launch farmland capital construction in a thorough going manner. [Changsha Hunan Provincial Service in Mandarin 2310 GMT 25 Dec 81]

HYBRID RICE--Changsha, 9 Jan (XINHUA)--Hunan Province has reaped a bumper harvest from the more than 15.8 million mu of hybrid rice planted in 1981, with per-mu yield reaching 663 jin, topping 1980 by 20 jin. In some prefectures, per-mu yield of middle-season hybrid rice exceeded 800 jin. In eight counties, the per-mu yield exceeded 900 jin. In 1981, the province was inflicted by drought, low temperatures, continuous rains and other natural disasters, which resulted in reduced output of some regular rice. However, hybrid rice demonstrated its superiority as a fast-ripening and high-yielding strain. [Beijing XINHUA Domestic Service in Chinese 0236 GMT 9 Jan 81]

CSO: 4007/171

JILIN HOLDS FORUM ON RESPONSIBILITY SYSTEMS

SK031126 Changchun Jilin Provincial Service in Mandarin 2200 GMT 2 Jan 82

[Excerpts] According to Jilin Ribao, the Provincial Agricultural Commission held a forum of chiefs of rural work offices of the municipal, prefectoral and autonomous prefectoral CCP committees 24-27 December 1981. The forum summed up and exchanged past experiences in readjusting and improving the production responsibility systems, studied the new situation and problems and discussed and offered suggestions to further upgrade responsibility systems in agricultural production.

All participants held that since the provincial meeting of party cadres at and above the county level, all localities have regarded the improvement of production responsibility systems as their central task in rural areas. Leading cadres have personally taken charge of and made arrangements for the work. All localities have done a good job in implementing the responsibility systems and have scored remarkable achievements. The main aspect of the work has been good and healthily developed.

The forum held: Readjusting and improving the responsibility systems during the winter-spring period is widespread in our province. We must face reality, clearly understand the present state of affairs and the difficulty of the work, strengthen leadership, study the new situation and solve new problems and strive to do a better job in this regard.

1. In readjusting and improving the production responsibility systems, we must classify the situation in order of importance and urgency and give guidance to the masses according to their needs. Responsibility systems which have been proved effective through practice must be stabilized and announced to the masses and be adopted at an early date. We must pay more attention to perfecting the responsibility systems in order to set people's minds at rest and to bring the role of the system into play.

2. We must protect and make full use of the existing production capacity and collective property to promote development of the collective economy.

3. We must combine readjustment and improvement of responsibility systems with the work of promoting all-round development in agriculture, forestry, animal husbandry, sideline occupations and fisheries. We must ensure both grain production and the development of the diversified economy. Regardless of what forms of responsibility

systems we have adopted, we must continue to run well some collectively owned diversified economic production units such as orchards, nurseries, livestock raising farms and processing plants. Leaders should support commune households to develop the diversified economy and sideline occupations.

4. We must make proper arrangements for the surplus laborers in the rural areas. We must make use of all possible conditions such as the collective economy and commune member households to open production avenues to provide jobs for the surplus manpower.

5. Regardless of what forms of responsibility systems the production teams have adopted, they must enact unified farming plans and production plans for agriculture, forestry, animal husbandry, sideline occupations, fisheries and industry under the guidance of the state plans in order to ensure the coordination and unification of the land ownership right and the management right. Production teams' crop farming acreage must be designated in a unified way. We must never allow the contract households to plant whatever they like. The contract production households only have self-determination rights in planting under the guidance of state plans.

6. In establishing agricultural production responsibility systems we must also conclude contracts. Contracts once signed will be legally binding. Both sides must earnestly implement the contract within its period of validity.

7. We must strengthen the work of rural grassroots units. Production responsibility systems must not affect and weaken the building of party organizations and leading bodies of production teams. Ideological and political work must be strengthened in the rural areas. We must adhere to the four "not-to-changes" set forth by the central authorities and the socialist road.

CSO: 4007/170

BRIEFS

AGRICULTURAL MEETING--The Jilin provincial agricultural work conference concluded on 12 January. The conference pointed out: The provincial CCP Committee expects that the province's grain and soybean output will increase 3 to 5 percent in 1982 on the basis of last year's 18.3 billion jin of grain and soybeans. Mu Lin, Standing Committee member of the provincial CCP Committee and deputy governor of the province, and Jin Minghan, Standing Committee member of the provincial CCP Committee and vice chairman of the provincial Agricultural Committee, attended and spoke at the conference. [Changchun Jilin Provincial Service in Mandarin 1100 GMT 13 Jan 82]

CSO: 4007/171

LIAONING

BRIEFS

FRESH-WATER FISH--As of the end of 1981, Liaoning Province produced 10,647 tons of fresh-water fish, an increase of 2,217 tons or 26.2 percent over 1980. The province allocated some 2 million yuan to Liaoyang, Shenyang, Anshan and Yingkou municipalities to develop them into commodity fish bases. [Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 16 Jan 82]

RICE OUTPUT--Liaoning reaped a bumper rice harvest last year. It yielded a rice output of 5 billion jin over its 5.92 million mu of paddy fields, a more than 300 million jin increase over the 1980 figure. [Shenyang Liaoning Provincial Service in Mandarin 2200 GMT 9 Jan 82]

FARM-PRODUCE PROCUREMENT--Supply and marketing cooperatives in Liaoning Province procured more than 600 million yuan of farm and sideline products in 1981, mainly cotton, hemp, flue-cured tobacco, fruits, native produce and animal by-products. Compared with 1980, procurement of these products increased from 10 to 50 percent. [Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 15 Jan 82]

FARM-PRODUCE MARKETS--In Liaoning Province, the business volume of 1,113 farm-produce markets totaled 854.71 million yuan in 1981, an increase of 43.8 percent over 1980. Grain sales in these markets totaled 373.41 million jin, a 32.2 percent increase over 1980. Compared with 1980, business volumes of rice, sorghum, corn, oil-bearing seeds, pork, live chickens, eggs, edible vegetable oil, aquatic products and vegetables increased from 10 to 65 percent. The percentage of the business volume of farm-produce markets as a part of commodity retail sales increased from 5.1 percent in 1980 to 6.5 percent in 1981. [Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 12 Jan 82]

TIELING PREFECTURE AGRICULTURE--In 1981 Tieling Prefecture, Liaoning Province, sold to the state 2.26 billion jin of commodity grain, 700,000 head of hogs, and 3 million jin of eggs--an increase of 450,000 jin over 1980. In 1981, Tieling's local and native product output value was 22.55 million yuan, an increase of 11.5 percent over 1980. [Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 18 Jan 82 SK]

CSO: 4007/170

BRIEFS

NEI MONGGOL CAPITAL CONSTRUCTION--In 1980 and 1981, Ih Ju League, Nei Monggol region, had UNK 26,762 small water wells, built irrigation land comprising 50,000 to 60,000 mu, constructed over 60 river-harnessing projects, prevented an area of 886 square kilometers from becoming sandy and built 6,000 small forage paddocks over an area of 120,000 mu. [SK032237 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 2 Jan 82]

NEI MONGGOL LIVESTOCK--Nei Monggol autonomous region made steady progress in raising livestock in 1981. According to statistics, the region's annual increase was 10.3 million head, a 13.3 percent increase over the 1978 figure. In developing individually-owned animals, the region's annual increase surpassed the 1978 figure by 150 percent. [SK062214 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 5 Jan 82]

MILLET PROCUREMENT--Beijing, 12 Jan (XINHUA)--According to MINZU TUANJI [NATIONAL-ITY UNITY] journal, the Nei Monggol autonomous region overfulfilled the 1981 Millet Procurement Plan. Last year, the region sowed 640,000 mu millet, 6 percent more than 1980, and harvested 457 million jin millet, topping the previous year by 21 percent. [OW131125 Beijing XINHUA Domestic Service in Chinese 0030 GMT 12 Jan 82]

PEASANTS' INCOME INCREASES--According to our reporters (Duan Wei) and (Wu Lingde), our rural areas conscientiously implemented the economic principle of emphasizing forestry and animal husbandry while developing a diversified economy to overcome many natural disasters, reaped a bumper harvest in agriculture and animal husbandry and substantially increased commune members' incomes in 1981 on the basis of bumper harvests the previous 2 years. The rural areas of the region have taken on a completely different look, and a picture of prosperity has emerged. Our region has a vast territory, rich natural resources and good conditions for developing a diversified economy. In the past few years, rural areas have appropriately readjusted the agricultural structure and crop distribution while developing grain production to stop the vicious cycle of large-acreage poor harvest caused by long-time emphasis on grain production alone. In 1981, the region's oil-bearing crop output was 600 million jin and its sugar beet output was 2 billion jin, an increase of 10 and 20 percent, respectively--both surpassing historical records. The per-capita commune members' income from collective distribution was less than 50 yuan in 1977 and was 215 yuan in 1981, a 300 percent increase. In the past few years, about 25 percent of peasants moved into new houses every year. The peasants' savings in banks have been increasing every year. By the end of 1981, commune members' savings deposits throughout the region reached 285.54 million yuan, a 30.5 percent increase over the corresponding 1980 period. [Excerpts] [SK230446 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 22 Jan 82]

QINGHAI

BRIEFS

GRAIN PROCUREMENT--Qinghai Province prefulfilled and overfulfilled its 1981 grain procurement plans. According to statistics from the Provincial Grain Bureau, by 5 January grain being put into storage reached 150,5 million jin, a 0.5 percent increase over the 1981 procurement plan and over a 27 million jin increase above the figure of the corresponding 1980 period. [SK110647 Xining Qinghai Provincial Service in Mandarin 2330 GMT 10 Jan 82]

EDIBLE OIL--According to the provincial grain office, urban and town residents are allowed to trade edible oil for coarse food grain such as corn, sorghum and millet beginning January of 1982. Each 8 jin of coarse food grain will be traded for 1 jin of edible oil. [SK060540 Xining Qinghai Provincial Service in Mandarin 2330 GMT 5 Jan 82]

CSO: 4007/169

BRIEFS

FORESTRY CONFERENCE--The Shaanxi Provincial People's Government recently convened a work conference. The conference demanded that all localities in the province strive to fulfill the task of fixing mountain rights, allocating private mountains and setting up the forestry production responsibility system, so as to facilitate the protection of forests and the development of forestry. The conference held that the production of forestry in the province was making good progress. During last spring and autumn, the province had afforested some 4.94 million mu of land, overfulfilling the quota by 43 percent. In general, the quality of saplings and timber was improved, and we have scored good results in protecting the forests and preventing hill fires. The conference emphatically discussed how to do a good job of the three fixed quotas of forestry. At present, 10 counties in the province have completed pilot projects of the three fixed quotas, 39 counties have launched pilot projects and 38 counties are preparing for the work. According to statistics of some 60 counties all over the province, 4.2 million mu of mountains were allocated to the peasants. However, a few leaders have not attached sufficient importance to the three fixed quotas of forestry. The conference called for strengthening leadership, doing a good job of the three fixed quotas of forestry, protecting the existing forests and enhancing the enthusiasm of the peasants. [HK150639 Xian Shaanxi Provincial Service in Mandarin 1130 GMT 19 Dec 81]

VEGETABLE PRODUCTION CIRCULAR--The Shaanxi Provincial People's Government recently issued a circular on increasing production of vegetables. The circular demands that the principal leading comrades of all cities and key industrial and mining areas personally take charge of production of vegetables for several years in order that there will be an ample supply of vegetables and that the prices of vegetables will be lowered. The circular points out that the suburbs of the urban areas, factories and mines must resolutely implement the principle on the development of vegetable production. Full-time vegetable teams must devote themselves to vegetable production. Communes must make arrangements for the contracts on the production and sales of vegetables to be signed by departments which deal in vegetables and production teams which produce vegetables. Those who do not fulfill the contracts must be responsible for damages paid to the other side which incurs loss. In serious cases, public security and administrative departments at and above county level will impose fines on those who do not fulfill contracts. No units or individuals are allowed to occupy the existing fields sown to vegetables in urban, industrial and mining areas. If they really need them, they must submit their application to the Provincial People's Government for approval. [Xian Shaanxi Provincial Service in Mandarin 1130 GMT 21 Dec 81]

001 4007/171

SHANDONG

BRIEFS

PEOPLE'S INCOME--Yantai Prefecture, Shandong Province, registered an agricultural income of over 3.2 billion yuan in 1981, a more than 150 million yuan increase over the 1980 figure. Per capita income reached 200 yuan, a more than 10 yuan increase over the 1980 figure. In addition to the income derived from domestic sideline production, the highest personal gain reached over 260 yuan. The prefecture also registered a 2.43 billion yuan income derived from developing a diversified economy, a 360 million yuan increase over the 1980 figure. The proportion of income derived from developing a diversified economy to the prefectoral agricultural income increased from 53.2 percent in 1980 to 56 percent in 1981. [SK110645 Jin Shandong Provincial Service in Mandarin 2300 GMT 10 Jan 82]

CSO: 4007/169

SHANGHAI SUBURBS REPORT BETTER ECONOMIC SITUATION

OW190625 Shanghai JIEFANG RIBAO in Chinese 11 Jan 82 p 1

[Excerpts] The economic situation in Shanghai suburbs took a new turn last year. The total agricultural, sideline and industrial output value is expected to exceed 8 billion yuan, an increase of 10 percent over the previous year.

In spite of serious natural disasters, which affected agricultural production, cotton excepted, grain and rape output increased in varying degrees. The total grain output registered an increase of approximately 10 percent (allowing for reduced grain acreage, expanded cotton acreage and the ratio of oilbearing crops to grain.) Their diversified undertakings, such as vegetables, pigs, poultry and milk, also progressed well. The total output value of industries run by the communes. Production brigades and teams reached 3.65 billion yuan, an increase of 20 percent. The total amount of agricultural, sideline and industrial products procured for export in relation to foreign trade is expected to top 1 billion yuan, an increase of 25 percent.

In summing up last year's rural work, the municipal agricultural committee pointed out emphatically that numerous problems still exist, in spite of the considerable achievements made last year. The more prominent problems are: Agricultural output is high but unstable, the tendencies of deviating from and belittling agriculture, and the party's work style in the rural areas has not changed drastically for the better.

That these problems have remained unsolved over a long period is due primarily to a considerable number of cadres having placed agriculture in incorrect prospective in their guiding thought and the tendency to belittle and deviate from agriculture remaining unchanged. Such tendencies even continued to grow in some communes and brigades. This has constituted a very serious potential danger. In reviewing the problems existing in suburban work in 1981, the leading party group of the municipal agricultural committee felt that the leading party group was primarily responsible for not improving the party work style in a deepgoing way, for failure to investigate and study the new situation and new problems thoroughly and for not coming up with effective measures for solving these problems once and for all.

The leading party group of the municipal agricultural committee has earnestly implemented the municipal CCP Committee's policy of "achieving higher and stable output and forging ahead persistently" and promoting overall and coordinated development

of agriculture, sideline production and industry in a down-to-earth way by adhering to the principles of "stepping up grain production and actively developing the diversified economy" and of "enhancing agriculture, developing sideline production and readjusting industry."

The leading party group of the municipal agricultural committee pointed out: The main direction of attack for rural work in the suburbs this year is to try to make noticeable progress in achieving higher and stable output in agriculture, to do away with the tendencies to deviate from and belittle agriculture and to improve the party work style in the rural areas. Before the advent of the busy spring farming season, it is necessary to further imporve and perfect the various types of agricultural production responsibility system. The leading authorities at all levels in the meantime should go deep into the realities of life to sum up experience and make a determined effort to improve and perfect the responsibility system.

CSO: 4007/169

DRYLAND FARMING SAID FUNDAMENTAL WAY TO DEVELOP AGRICULTURE

Taiyuan SHANXI NONGYE KEXUE [SHANXI AGRICULTURAL SCIENCES] in Chinese No 11, 20 Nov 81 pp 2-5

[Article by Jiao Peigui [3542 1014 2710], Crop Genetics Institute, Shanxi Provincial Academy of Agricultural Sciences: "Dryland Farming Is the Fundamental Way to Develop Shanxi Province's Agriculture"]

[Text] Shanxi Province is located in a dry area where the quantity of precipitation is scant and where droughts are frequent. The masses have a saying that there is a small drought once every 3 years, a medium size drought once every 5 years, and a major drought once every 10 years. The main way of handling drought at the moment is construction of water conservancy projects for expansion of the farmland irrigation area. But the province's water conservancy resources are limited; annual precipitation amounts to only 300 to 500 millimeters, and both surface water and ground water resources are curiously lacking, their development having already been made to a maximum extent. The potential is not great. For this reason, the fundamental way to develop the province's agriculture lies in adoption of measures in line with this, adapting general methods to the local situation to carry out dryland farming. The province's dryland area is substantial; it's dryland farming well-known, and experiences with dryland crops extremely plentiful. Dryland farming should be actively advocated to make full use of advantages for dryland crops to solve agricultural problems.

1. Significance and Principles of Dryland Farming

Dryland Farming, which is also called dry cultivation or dry farming for short, is a form of cultivation in agriculture. It is a method for undertaking productive farming without making use of irrigation in places where annual precipitation averages 12 to 20 hours (300 to 500 millimeters). In any year in which annual precipitation averages 20 to 30 hours (500 to 762 millimeters), without making use of irrigation, farming can be carried on through reliance on natural precipitation. However, when distribution of rainfall is uneven, or when the rainy season is overly early or overly late, or when it does not coincide with the needs of crop growth, or when it passes over quickly, or when dry winds frequently blow and it is difficult to maintain moisture, dryland farming is best used. In the United States the criteria are that when annual precipitation is less than 10 hours (254 millimeters) and farming cannot be done without irrigation, it is an arid area. Where precipitation falls for from 10 to 30 hours (255 to 762 millimeters) but distribution of rainfall is not well matched to crop growth needs, it is a semi-arid

area. Where rainfall is less than 30 hours, but its distribution substantially meets crop growth needs, it is a semi-moist area. In Shanxi Province, except for a few places in the northwest where rainfall is below 300 millimeters making it an arid area, most places have an annual rainfall of between 300 and 500 millimeters. In individual years, individual places may get as much as 600 millimeters, but most of it is distributed between July and September, which means it is not sufficiently well coordinated with crop growth. Serious drought in spring, in particular, hurts spring sowing of crops and crop growth. Therefore, an overwhelming majority of places are semi-arid areas requiring the adaptation of general methods to local situations to do dryland farming. Dryland farming is a farming method that uses scientific principles so that crops will grow well without irrigation when rainfall is insufficient.

The relationship among dryland farming and quantity of rainfall and soil is crucial. To do dryland farming, in addition to knowing quantity of rainfall and its distribution, it is necessary as well to be thoroughly conversant with the area's soil properties, soil fertility and ability to store rainwater, i.e. its ability to preserve moisture. Because rainfall is precious in arid areas, every effort should be made so that all rainfall is retained in areas to which plant roots are able to extend so that crops can absorb and use it. It is also necessary to figure out ways to reduce evaporation from the surface of the soil and loss of water through seepage into the ground so that the limited quantity of rainwater will be provided to the maximum extent possible for the absorption and use of crops, unnecessary consumption being reduced. The essentials of dryland agriculture are contained in the following three points, namely, preservation of a large quantity of rainwater, restriction of evaporation of surface moisture, and reduction of pointless consumption of moisture. Therein lie the principles for dryland farming.

2. Limitations on Dryland Farming

Whether or not dryland agriculture can be carried on is frequently limited by numerous factors, of which quantity of rainfall and the soil are most crucial.

(1) Quantity of rainfall. Though a small quantity of moisture may be used to gain maximum output in the dryland farming method, all crops need a certain amount of water in order to complete their growth and development. Therefore, the quantity of natural rainfall must at least satisfy the minimum needs of the crops if a harvest is to be had. Generally speaking, it is necessary to have an annual minimum rainfall of from 300 to 500 millimeters that is properly distributed and conserved in the proper way for dryland farming to be successful. When quantity of rainfall in any given year is less than 254 millimeters (200 to 250 millimeters marks the borderline between farming and animal husbandry), it is possible only to grow grass to raise cattle; dryland farming cannot be used to grow crops. Because existing agricultural scientific knowledge is still unable to make use of these places, without irrigation it cannot succeed.

(2) Soil. Soil alkalinity or acidity, friability of texture, size of soil particles, and thickness of surface layer are all intimately related to whether or not dryland agriculture can be carried out. The most ideal soil for dryland farming is neutral, and a friable texture like that of sandy soil is best. If soil is too loose, it will not store water well, and if it is too dense, it is not easily

cultivated nor will it easily maintain seedlings. Soil particles that are either too small or too large are not desirable. If the soil surface layer is thick, being more than 25 millimeters or if soil properties are not good, even if rainfall is sufficient and farming techniques the best, success will be difficult to attain.

3. Rainfall and Soil in Shanxi Province

(1) Quantity of rainfall. Quantity of rainfall in Shanxi province is comparatively, scant, mostly being between 300 and 500 millimeters, and distribution is uneven from one year to another. If irrigation is not available and sole reliance is placed on the heavens, failure is certain. By using dryland farming, however, with careful conservation of water, despite the limited rainfall, even without irrigation, a harvest may be looked forward to in 9 years out of 10.

(2) Soil: Shanxi is located in the loess highlands where the sandy soil has the properties of lime. Soil properties are good and ability to store water is strong. The soil layer is thick, more than 2,000 chi deep in places and more than 10 chi deep in relatively shallow places.

In terms of quantity of rainfall and soil properties, Shanxi Province is suited for dryland farming. Three-fourths of the cultivated land in the province is dryland, belonging to the "rain supported" area; consequently, there is urgent need for active advocacy of dryland farming. The noted plant physiologist Makeximofu [phonetic and possibly Maximov] said that to know only how to enlarge the irrigated area while neglecting improvement in dryland farming production, I fear is the greatest error. Experience has shown that this is so.

4. Dryland Farming Methods

(1) Storage of Water in the Soil

Maintenance of soil moisture is the key to dryland agriculture. The way to conserve moisture lies in finding ways to store large quantities of rainwater and to control pointless depletion of moisture. However, facts show that not all the rainfall can be conserved, and what is conserved cannot be entirely absorbed and used by crops. A 20 year analysis conducted between 1957 and 1978 in Guyuan, Ningxia Province showed an interrelationship coefficient of only 0.17 between quantity of annual rainfall and average yields per unit of area, the interrelationship being very slight. The crops used only one-third the amount of annual rainfall; the utilization being very low. This shows that a very great potential exists for the use of natural precipitation to increase output. The major measures for conservation of rainfall are the following two.

Construction of basic fields that hold water and hold soil. The best basic fields in hilly dryland areas are level terraced fields. Available data show that the annual amount of runoff for cultivated slopes in hill and rairie areas is 40 to 70 cubic meters per mu, and the annual amount of soil erosion is 5,000 to 10,000 kilograms per mu. By building terraced fields, all the water, soil, and fertility can be conserved for consistently high yields. Practice has shown terraced fields increase output by more than 20 percent over slopes, and in some cases the increase is several fold.

.. Development of runoff agriculture. The principle and practice of runoff agriculture rely on the collection of rainwater. The basic requirement is to provide a sufficient volume of water from the water collection area to enable agriculture to succeed. Use of runoff agricultural techniques during the past few years has shown them to be reliable. Shanxi is located in the less highlands where soil erosion is serious. It possesses all the conditions for development of runoff water storage for use in agriculture. The building of dams across ravines, and the diversion of flood waters and such methods already in use may be regarded as in the category of runoff agriculture. Right now Shanxi Province's advocacy of runoff agriculture should be small scale runoff agriculture (a small water collection area). Efficiency is higher than for large scale collection of water; less labor is required, costs are lower, and there is no need to build watercourses; catchment may be built on any slope. Another use of runoff water should be mainly to supplement the water supply in order to solve a shortage of water during serious drought or at crucial times in the growth and development of crops. Experiences both in China and abroad has shown that plants requiring relatively small amounts of water such as gaoliang, barley, pasture grass, some fruit trees and nut trees are suited to cultivation using runoff agriculture. Broom corn millet, buckwheat, and pulses, which have a short growing season, also have good prospects for development through runoff agriculture.

(2) Farming Measures

Basic fields that conserve soil and water provide a good foundation for combatting drought for increased yields. However, in order to get appreciable results, it is imperative that the farming system be improved and fertility built up in the basic fields. Practice has shown that through conscientious measures to combat drought in cultivation the following can be done: (1) Increase the ability of the soil to hold water and conserve water. (2) Promote spread of root systems to enlarge the area from which root systems absorb water to increase their ability to absorb water. (3) To increase the utilization rate and physiological resistance to drought of the crops themselves. The major farming methods for combatting drought are as follows:

1. Plowing and raking to hold water. Methods of plowing and raking so the soil will hold water include deep plowing to hold soil moisture, raking and smoothing of the soil to conserve moisture, and packing the soil before and after sowing to bring up soil moisture. Deep plowing increasing the fluffiness of the soil allowing rain to rapidly penetrate it, reducing loss through evaporation. It is a method that should not be ignored in dryland agriculture. According to experiments conducted by the Northwest Water Conservation Institute around Lishi in Shanxi Province, a single deep plowing to a general depth of 50 centimeters allowed the soil to hold more than 15,000 jin per mu of rainfall, and both the amount of water that penetrated the soil and the depth of moisture differed strikingly. For example within a period of 15 minutes, a wheat field plowed to a depth of 3 cun soaked up 70 millimeters of water to a depth of 50 millimeters. a wheatfield deeply plowed to a depth of 7 cun soaked up 100 millimeters of water to a depth of 70 millimeters making for extremely remarkable increases in yields.

in most prefectures in Shanxi Province, crops harvested in the fall are planted for the most part, and once the fall harvest is over, a rather long fallow period

ensues. This is a good time for fall plowing; and attention should be given to deep fall plowing so the soil can store up water. Experiments conducted at Sunjiagou in Lin County in Shanxi Province show increased yields of 22.3, 32.2 and 10.7 percent respectively for millet, gaoliang, and corn in deep-plowed fields as compared with shallow-plowed fields. In deeply plowed fields the root system on corn reaches 2 meters, while it reaches only about 1 meter in shallowly plowed fields. The depth of deep plowing depends on soil properties and the plowing implements used. Generally a depth from 6 to 7 cun is about right. If plowing is to be deeper, depth should be increased little by little over a period of years. One should not suddenly plow too deep bringing raw soil to the surface. In addition, in areas of severe wind and water erosion, general methods should be adapted to local situations in an advocacy of little plowing or shallow plowing. This is not entirely the same as no plowing methods. At the present time conditions have not yet been made ready for the practice of no plowing methods. In reality, deep plowing and soil conservation are closely linked. For example, methods promoted in China such as contour farming following ditches and ridges, divisional land cultivation, miry fields, trench fields, and hollowing out to dibble seeds both play a role in deep plowing and in conservation of soil and fertility, and have been spread over a certain area in dryland farming.

The purpose of raking and smoothing the soil is to increase the porosity of the soil surface and to form a friable protective layer to stop capillary action between the top and bottom layers so that moisture will not rise to the surface and evaporate, reducing to the minimum moisture loss through evaporation. According to raking done before sowing in Linyi County, measurements taken at the time of sowing showed that raking can reduce evaporation by more than 2 percent. The purpose of bringing moisture up is to get the water stored in the deep layers of soil to add to surface moisture. In Shanxi Province, spring drought is common and often it is impossible to plant because of drought. For this reason the main season for bringing up moisture is the spring. The way to bring up moisture is packing of the soil before and after seeding. Packing is strikingly effective in increasing soil moisture to a depth of 20 centimeters, generally increasing moisture by 3 percent. This is the equivalent of a watering with 300 dan of water.

Method of increasing fertility to regulate water. Increased fertilization can increase soil fertility and reduce numerous pests of growing crops. Surveys show that corn grown on highly fertilized soil remarkably increased its utilization of soil moisture as compared with corn grown on ordinary soil. To a depth of 3 meters, corn grown used 44 cubic meters more water than corn grown on ordinary land. This amounts to one-fourth the volume of water consumed by corn during its period of growth, and is called "using fertilizer to regulate water." In addition, fertilizer can also change soil properties, increasing the soil's ability to conserve water and remarkably strengthening physiological drought resistance. A survey done in Guyuan in Ningxia Province shows that soil in which fertility had been built up used 2.66 millimeters of water to produce 1 jin of grain, while soil with low fertility used 5.5 millimeters, double the amount. Of all the kinds of fertilizers, organic fertilizers are best for this purpose, things such as increased spreading of barnyard manure, return to fields of stalks and stems, and the growing of green manure. In addition to organic fertilizer, results are striking in combatting drought and increasing yields when phosphate fertilizer is used. Experiments conducted by the Northwest Water Conservation Institute show that when

mountain dryland soil had an effective potassium content of 5 parts per million, the application of 50 kg per mu of calcium carbonate resulted in increased yields by more than 50 percent. When applied similarly to the field system, results were even more remarkable with manifold increases in yields.

4. Clear land fallow rotation method. The clear land fallow rotation method means cultivation of the fields during the fallow period so as that rainfall collects in the soil and does not run off. This is a single crop, and so as to increase the natural fertility of the soil. This method has been in use in north-west Shanxi for a long time, and is known as a valley rotation leaving the land barren. However, during the fallow rotation period unless cultivation is done assiduously, weeds will proliferate and though they increase soil fertility, they do little to conserve water and should be removed.

The length of the fallow rotation period has to be decided on the basis of local amount of rainfall and soil characteristics. When rainfall comes for between 10 and 15 hours, a system of fallow rotation should be used every other year. When rainfall is even less, two fallow periods every 3 years should be used. When rainfall comes for between 15 and 20 hours, fallow rotation once every 3 or 4 years will suffice. If rainfall is greater exceeding 20 hours, unless there is some other reason to do so, it is best not to practice fallow rotation.

5. Method of thinning seedlings to conserve water. The work of thinning seedlings should get underway early to avoid waste of soil moisture and to avoid crowding that inhibits growth. A farmer's adage has it that "to pull up a single seedling is as good as manuring." A similar adage exists abroad: "Corn are the weeds in a cornfield." By this is meant that when corn seedlings are too dense or when thinning has been done too late, they do the same damage as weeds.

6. Method of controlling surface evaporation. The annual loss of water through evaporation is very great. In arid climates, it is particularly great. Of all the ways to control surface evaporation, raising the soil and cultivation between rows of crops are most important. The practice in some parts of northwestern Shanxi of scattering seeds not only wastes man's seed that do not grow well, but makes cultivation between rows impossible and controls surface evaporation difficult. Where conditions permit, it would be better sawing in rows.

7. Ground cover method. The purpose of any ground cover is to control evaporation and increase moisture penetration. Ground cover also increases ground warmth, and cuts down on weed pests. Materials used as ground covers include plastic sheeting, gravel, stalks and stems, charcoal slate, and shingle. Results are outstanding from the use of plastic sheeting, and its use is now widespread. Spreading gravel on fields is economical and long lasting. Once spread, the job is done and the gravel can be used for several decades. In Pingyao and other parts of the province, the spreading of gravel on fields has been in use for a long time, and where conditions permit, an enlargement of the gravel field area should be advocated. Where conditions do not admit the spread of gravel, plant stems and weeds may be used.

5. Conclusion

(1) Shanxi Province where out of 10 years are dry ones, where three-fourths of

the cultivated land is dryland, and where most of the land is dry and infertile producing low yields and belonging to "rain supported" fields is a classic semi-arid area. Dryland farming should be promoted here, and this is the basic way to develop the province's agriculture.

(2) Advantages in development of dryland farming are: first, the need for vigorous afforestation and the growing of grass; second, adaptation of general methods to local situation for planting of more high yield drought resistant crops, and high yield drought resistant varieties; third, the need to spread high yield drought resistant farming techniques; and fourth, adaptation of general methods to local land and local seasons of crop distribution patterns.

(3) The key to high yields in dryland farming lies in increased application of organic fertilizer to build up soil fertility. This not only builds fertility for high yields, but also builds moisture for high yields. In the dry infertile regions of the province, one crop of pulses or green manure should be part of the crop rotation system. In places where land is plentiful relative to population, fertility and soil moisture should be increased through rotational cropping of fields to grass to achieve consistently high yields.

(4) Dryland farming is an agricultural technique that is strongly all-encompassing and ramifies over a wide area. In order to do a good job of dryland farming, it is necessary, first of all, to have a proper farming system. Such a system must be compatible with local natural conditions, with socio-economic conditions, and with possibilities for future development if it is to make full use of the potential in local agricultural resources. Though individual techniques may have a certain effectiveness, they are limited.

(5) Drought resistance of dryland farming still poses numerous problems requiring deep study. Examples include the moisture balance for forest, farming, and live-stock raising lands, the minimum and optimum quantity of water for various crops, the effects of various measures on increasing crop water utilization rates, and problems centering around the crucial links of theory and laws governing improvement in the utilization rate of moisture by crops in dryland farming. In addition, the role of numerous trace elements, hormones and such chemical substances on increasing crop drought resistance, economic application principles for small amounts of irrigation water, simple quantitative methods for evaluating crop drought tolerance, and modern methods of drought forecasting, no matter whether in terms of present or long term needs, require planned earliest research so that the drylands of the province will change with all possible speed their situation of dryness, infertility, and low yields.

04.11
Ref: 4007/156

SHANXI

LOCAL RICE CHARACTERISTICS DESCRIBED

Taiyuan SHANXI NONGYE KEXUE [SHANXI AGRICULTURAL SCIENCES] in Chinese No 11, 20 Nov 81 pp 11-12

[Article by Hou Yaowen [0186 069 2429] and Liu Changshun [0491 7022 7311], Wheat Institute, Shanxi Provincial Academy of Agricultural Sciences: "Superior Characteristics of Some Local Wheat Varieties in Shanxi Province"]

During 1979 and 1980, we planted at the institute (in Linfen City), 560 plants of local wheat varieties used in Shanxi Province on which we conducted preliminary observations and study. Some of the major characteristics for some varieties are presented here.

1. Early ripening. Because of the shortness of time allowed for development, Shanxi Province's local wheat varieties green up rapidly, form spikes early, and during the late stage of growth in particular, the coming into milk gain is rapid, the process of late stage ripening is short, yellowing good, and there is extraordinarily conspicuous early ripening, some varieties having particularly early ripening. Most varieties ripen around 16 June, some as early as 8 June. Varieties such as Zaomai from Ruichen, Hangdon's Hongheshang, Jieyu's Sanyuehuang, Linyi's Yangzhong Sanyuehuang, and Hejin's Jinguoyin (See Table 1), are all representative early maturing varieties. Varieties from these areas are suitable for resowing, which can avoid or reduce damage from hot dry winds.

Table 1. Ripening Date for Some Regional Varieties

Producing Area	Variety	Spiking Date (Mo/Day)	Ripening Date (Mo/Day)
Ruicheng	Zaomai	5/1	6/9
Gaoping	Hongtutou	5/4	6/11
Linfen	Mazhatui	5/2	6/12
Hongdong	Honheshang	5/5	6/8
Jieyu	Sanyuehuang	4/20	6/9
Linyi	Yangzhong Sanyuehuang	4/30	6/9
Lingchuan	Hongtumai	5/5	6/12
Changzhi	Youjidu	5/3	6/12
Yuncheng	Maomaomai	4/30	6/12
Wanrong	Youmang Jinguoyin	5/4	6/12
Jieyu	Wumang Siyuehuang	5/1	6/9
Hejin	Jinguoyin	5/4	6/9

2. Short Stem Characteristic. Most regional plant varieties are tall, but screening revealed a group of short stem materials that could be used as short stem sources. Examples were Bashanmai from Linyi with a plant height of only 87 centimeters, but stem thicknesses of about 4 millimeters, and Zaomai plant from Ruicheng, which were only 85 centimeters tall, but had stem thicknesses of about 4.5 millimeters. These belonged to short plant, thick stemmed, lodging resistant types (See Table 2).

Table 2. Plant Heights and Stem Thicknesses for Short Materials

Producing Area	Variety	Plant Height (cm.)	Stem Thickness (mm.)
Linyi	Baishanmai	87	3.9
Jieyu	Sanyuehuang	85	3.3
Jieyu	Baihuomai	67	4.2
Jieyu	Hongshangeda	73	3.4
Jieyu	Youmang Baishangeda	60	3.2
Jieyu	Baishangeda	80	4.4
Anyi	Changping Huomai	92	3.1
Changzhi	Gulianmang	92	4.7
Ruicheng	Zaomai	85	4.4
Jieyu	Youmang Shangeda	92	6.4
Jieyu	Jiebai No 3	90	3.7
Jieyu	Biquanmai	92	4.2
Jieyu	Youmang Shangeda	73	4.1
Jieyu	Maomaomai	79	5.6
Yuncheng	Baiheshang	92	4.2

3. Great Flowering and Many Grain Characteristics. The great flowering and many grain characteristics of the province's local varieties is also very conspicuous and may be divided into round glume numerous flower varieties and agglutinate [2362 1378] spike varieties. Each spikelet within a spike may form about five grains and some as many as six. Grains per spike number around 120. (See Table 3).

Table 3. Fruiting in Some Local Varieties

Producing Area	Variety	Grains per Spike	Grains per Spikelet
Linyi	Jinguoyin	96.4	4.42
Jieyu	Baishangeda	100.2	4.96
Tai'an	Henanmai	96.4	4.02
Zhongyang	Mangmai	97.2	3.98
Wenxi	Baimangmai	121.4	4.85
Wanrong	Xtabadou	95.2	4.18
Jieyu	Baimai	114.6	4.76

4. Tolerance of Cold. The province's local varieties show strong tolerance of cold. In northern and northwestern Shanxi Province, in particular, where winter temperatures and ground temperatures are low, they are still able to safely overwinter. Heshangtou from Yuanping, Lin County's Baisumai, Hongnaomai, and Damangmai, Yangqu's Heshangtou, Yushe's Dabaimai, Wenshui's Denglonghong, Changzhi's Hongxianmai, and Huomai from Anyi and Changping are all extremely cold-tolerant materials.

5. Drought Resistance and Tolerance of Infertility. In Shanxi Province where 9 out of 10 years are dry ones and where rainfall is lacking during the growing season for wheat, and particularly in dryland mountain areas, which are frequently threatened by drought disasters, local varieties have formed a resistance to drought and tolerance of soil infertility. For example, Niuzhijia wheat from Zhongyang, Baipang wheat from Liulin, and Youmang Siyuehuang from Jiexiu are all drought resistant and infertile soil tolerant materials.

In addition there is Kangjian wheat from Anyi, which is very strongly tolerant of salinity-alkalinity, Huangheshang from Yi County and Hongtu wheat from Qin County, which are rust resistant, Qisifeng from Anyi, whose tough stems are resistant to lodging, Xiaoxue wheat from Liulin and Youmang Siyuehuang from Jiexiu, which are resistant to hot dry winds, and Yangzhong Xiabadou from Linyi and Laishiba from Quwo, which are characterized by bumper yields.

6. Quality Characteristics. For some local varieties, not only is the external color and luster golden yellow, but quality of grains is excellent with fairly high protein content (See Table 4).

Table 4. Protein Content of Some Local Varieties

Producing Area	Variety	Protein Content (%)
Pingyao	Siyuehuang	15.3
Xianxian	Huangheshang	16.2
Pingding	Yongtangse	13.5
Linfen	Mangmai	14.1
Linyi	Zeibutou Baimai	15.7
Ruicheng	Quanmangmai	13.2
Yuci	Yongtangse	15.7
Yuncheng	Baigeda	13.5
Quwo	Baomai	14.4
Wenxi	Zigengzhi	14.8

BRIEFS

VEGETABLE PRODUCTION CONFERENCE--The Sichuan provincial conference on vegetable production was recently convened in Chengdu. Provincial CCP Committee Secretary Yang Rudai, and Vice Governor Guan Xuesi attended and spoke. The conference summed up the reasons for the short supply of vegetables at a certain time in the past in some localities. It put forth five suggestions. First, we must seriously implement the policy of attaching importance to producing vegetables in the suburban areas. Second, we must perfect the production responsibility system of communes and brigades which are responsible for growing vegetables. Third, we must actively advocate the contract system. Fourth, we must seriously improve management systems of vegetable departments. Fifth, we must attach importance to building stalls for selling vegetables. The conference held that the production of vegetables was directly related to the economic benefits of the staff and workers in the province and that all cities and industrial and coal mining districts should set up leadership groups to organize the production and supplies of vegetables. [HK141451 Chengdu Sichuan Provincial Service in Mandarin 2300 GMT 18 Dec 81]

SPRING-HARVESTED CROPS--Since the beginning of this year, Sichuan has adopted scientific measures in the sowing of spring-harvested crops. According to the statistics of the departments in charge: The area for growing grain has decreased by 2.7 percent compared with last year, since all localities attached importance to rational distribution of crops and economic effect, while the area for growing oil crops increased by 11 percent over last year. On average, the growing area for improved varieties of wheat amounted to 75 percent of the total growing areas in the province, which was over 5 percent more than last year. In Nanchong Prefecture, the growing area for improved varieties of wheat amounted to 85 percent, 10 percent more than last year. The growing area for improved varieties of oil crops in the province amounted to 90 percent. In the course of sowing, all localities paid attention to the timing and sowing, and increased the amount of fertilizers by 1,000 to 2,000 jin per mu. To meet the demand of the peasants since the introduction of the agricultural production responsibility system, all localities adopted various measures to publicize science and technology among the masses. [Chengdu Sichuan Provincial Service in Mandarin 2300 GMT 14 Dec 81]

XINCHUAN COUNTY BUFFALOES--Chengdu, 15 Jan (XINHUA)--Sichuan's Hongya County has succeeded in breeding an improved strain of hybrid buffaloes. A female buffalo of this strain can serve as both a draft and milch animal. The county has more than 27,000 head of hybrid buffaloes, about 15,000 of which are milch animals. Last year, each of them produced an average of 2,880 jin of milk. [Beijing XINHUA Domestic Service in Chinese 0117 GMT 15 Jan 82 OW]

XINJIANG

SCIENTISTS RESEARCH DESERT CONTROL

OW220740 Beijing XINHUA in English 0708 GMT 22 Jan 82

[Text] Urumqi, January 22 (XINHUA)--A 400-hectare oasis built through ten years' work on the southern slope of the "flame hill" in the Turpan depression--perhaps the driest and hottest place in China--"has opened new prospects" for desert control in Xinjiang, according to the Xinjiang Research Institute of Biology, Soil and Desert Sciences under the Chinese Academy of Sciences.

Scientists of the institute devised a method of planting desert shrubs to anchor sand dunes before building tree belts, instead of planting trees first as in the past.

This experiment is especially important to Xinjiang, which has 404,000 square kilometers of desert, accounting for 63 percent of the national total.

The scientists, in cooperation with local forestry cadres and peasants, began in 1972 creating the oasis 15 kilometers south of the "flame hill" across the southern part of the Turpan depression about 150 meters below sea level. This area is also known as the "land of fire," in reference to the hot weather in the area and the bright red color of the rocks and earth that cover the hills.

Three years after the work began, the desert fighters recovered their capital investment, by selling saplings and seeds of the desert plants. One of the plants the scientists chose to plant is capparis, a semi-shrub rattan that yields oil-bearing seeds.

Pear and grape orchards, Chinese wolfberry plots and fields of cotton and oil-bearing crops dot the oasis, now a state farm. It is protected by a belt of oleaster, capparis and other desert shrubs totaling 266 hectares, reinforced by 133 hectares of poplar trees to ward off sand storms that ravage the area at least a dozen times each year. In 1981 the farm earned 35,000 yuan in profits.

In Xinjiang, as in many other parts of China, planting tall trees has traditionally preceded other methods in desert control.

The Xinjiang scientists, however, decided to blaze a new trail. They planted shrubs first, then the tall trees.

Trees are certainly better than shrubs in anchoring sand dunes, they said. Nevertheless, they are less practical, since they need more water. In other words, large sums of money are needed to build irrigation projects specially for trees, which are beyond the capability of people in many areas.

CSO: 4020/80

BRIEFS

AGRICULTURAL ZONING CONFERENCE--Xinjiang region recently held its third conference on agricultural zoning work in Urumqi. Speakers at the conference were Li Jiayu, secretary of the regional CCP Committee, and Janabil, deputy secretary of the regional CCP Committee and vice chairman of the regional people's government. The conference held that in 1981 this region achieved gratifying results in the investigation of agricultural resources and in agricultural zoning work. Thirty-six counties and 22 farms have carried out agricultural zoning work. Some counties and farms have conducted soil survey and investigation of pastures, water resources and meteorological resources. At the same time, the region has conducted a comprehensive investigation of soil resources in the subordinate counties and the subordinate municipality of Ili Kazak Autonomous Prefecture. The region has completed zoning of animal husbandry, forestry, and agriculture. This work has provided scientific basis for the region to readjust the economic structure of agriculture, arrange production, formulate a long-term plan and give guidance in agricultural and livestock production. In 1982, this region will mainly carry out zoning in 32 counties and 73 farms and conduct an investigation of pastures, water resources and meteorological resources. The region will also conduct a comprehensive investigation of the middle reaches of the Tarimhe River, look into the strategic role of agriculture and make a report on the appraisal and rational utilization of its soil resources. The conference stressed that it is necessary to apply the achievements in zoning work to production. [HK150928 Urumqi Xinjiang Regional Service in Mandarin 1300 GMT 28 Dec 81]

RECLAMATION FARMS--Urumqi, 20 Jan (XINHUA)--Last year the 200 reclamation farms, covering around one million hectares of cropland, sold to the state 200,000 tons of grain, 40,000 tons of cotton, 6,000 tons of oils and 3,000 tons of hops, greatly exceeding state quotas. The farms also produced industrial products last year whose value reached 750 million yuan. This was a 5.6 percent increase over 1980. The farms sold to the state 10,500 tons of cotton yarn, 48.5 million meters of cotton cloth, 1.2 million meters of fine wollen fabrics, 800 tons of wollen yarn, 100,000 wollen blankets, 6,000 tons of detergent, 40,000 tons of sugar, 4,800 tons of liquor and 200,000 pairs of leather shoes. [Text] [Beijing XINHUA in English 0729 GMT 20 Jan 82]

CSO: 4020/80

BRIEFS

PROCUREMENT PRICES INCREASE--From 1979 to 1981, the peasants in Yunnan Province earned total income of some 1.1 billion yuan from agricultural production; the average income per head was 38 yuan. According to the policy of the central authorities and the instructions of the provincial CCP Committee and the provincial people's government, the procurement prices of the major nonstaple food have been revised one after another since 1979. The procurement price of grain has increased by 50 percent and that of surplus grain has also increased by 50 percent. The procurement prices of pigs, cattle, sheep, eggs and vegetables and other nonstaple foods have also increased. In the past 3 years, the peasants have earned some 700 million yuan from these. The province has also lowered the prices of agricultural means of production, such as chemical fertilizers, small farm tools and walking tractors. This has lightened the peasants' load and helped save some 199 million yuan. Furthermore, taxation was reduced for the peasants and some brigades and communes were exempted from taxation. This has saved the peasants 167 million yuan. [Kunming Yunnan Provincial Service in Mandarin 1100 GMT 24 Dec 81]

FOREST PROTECTION MEETING--The Yunnan Provincial People's Government recently convened a meeting in Kunming to sum up and exchange experiences of protection for forests since last winter. The meeting held discussions on and set plans for the three fixed quotas for production, purchase and marketing of forests. The meeting held: Forestry work has been implemented by the CCP committees and the people's governments at all levels since the third plenary session and they have done a fairly good job of it. However, they have not basically curbed indiscriminate lumbering nor systematically arranged purchase and marketing of timber. If the present situation is not changed as soon as possible, there will be a shortage of timber supply and the natural environment will be disturbed. Therefore, we must adopt appropriate measures to seriously protect the existing forests and devote major efforts to promoting afforestation. The meeting held that we must do a good job of fixing quotas for production, purchase and marketing of forests, fixing rights for mountains and forests and installing production responsibility systems for forestry; only then will we be able to curb indiscriminate lumbering and prevent hill fires. The party and government departments at all levels must have a thorough understanding of the urgency of this work and must strengthen leadership over it. [Kunming Yunnan Provincial Service in Mandarin 1100 GMT 16 Dec 81]

CSO: 4007/171

Agricultural Experiments

AUTHOR: XIAO Yihua [5135 5042 5478]
LIU Wenfang [0491 2429 5364]

ORG: Both of Department of Biology, Wuhan University

TITLE: "Research on the Lipase Coenzymes of Hybrid Rice and Its Parent 3 Lines"

SOURCE: Huanggang HUBEI NONGYE KEXUE [HUBEI AGRICULTURAL SCIENCES] in Chinese
No 11, Nov 81 pp 1-4

ABSTRACT: A great deal of work on coenzymes is being done in recent years both in China and abroad. Using gel electrophoresis, scientists of genetics and crop breeding view the various coenzyme spectra as direct products of genes and believe it to be possible to use coenzyme to link gene with external characteristic. Lipase is one of the hydrolytic enzymes and is believed to have detoxication and fat transforming actions. The lipase coenzyme content of rice leaf is relatively stable. The authors believe it may be used as a biochemical index of hereditary characteristics. This paper reports a study, using gel electrophoresis, to examine the lipase coenzyme similarity and difference between a hybrid rice and its parental 3 lines for the purpose of providing a theoretical and factual basis for determining the mechanism of formation of hybrid rice and forecasting its heterosis. Judging from the results of 5 hybrid breeds, in number of coenzyme bands, a hybrid has one more than its parents, except for one of the hybrids studied. The existence of the extra band, which is complementary coenzyme band, may be used to forecast the hybrid vigor of the breed.

AUTHOR: LIU Jinyu [0491 6855 3768]

ORG: Agricultural Technology Station, Erhe Commune, Hanchuan County

TITLE: "Several Opinions Concerning the Method of Producing Rice and Wheat Seeds"

SOURCE: Huanggang HUBEI NONGYE KEXUE [HUBEI AGRICULTURAL SCIENCES] in Chinese
No 11, Nov 81 pp 5-7

ABSTRACT: Presently, seed production in Hanchuan county follows the formulas decreed by the Provincial Department of Agriculture in 1963 and 65. The general impression is that the procedure is complex, the efficiency low, and the yield increase result obscure. In case of such self-pollinated crops such as rice and wheat, the formula requires selection of a single plant, cultivated in a stalk-row plot, before actual production in a seedbed. In 1965, the rule was changed to a 3-plot system, adding a stalk-row plot just as such easily hybridized crops as cotton. Although through selection, purification, revitalization, etc. the yield increase objective has generally been accomplished in the past 2 decades, the degree of hybridization of breeds of different origins has been observed to be less than uniform. The paper analyzes the necessity and the advantages of 2-plot and 3-plot systems for producing rice and wheat seeds and concludes that the prevailing 3-plot system may be simplified to save time and cost. The method of seed production for rice and wheat should mainly be determined by the purity of the breed. On the basis of sufficient caution to prevent mechanical mixing, for basically pure breeds of rice and wheat, a single plot to produce seeds directly should be all that is required, just as the practice in the southeast regions of Shanxi Province.

AUTHOR: DU Hongying [4653 4767 5391]
ZHANG Jinxiang [1728 6855 4382]
JIANG Jianguo [1203 1696 0948]

ORG: All of Jingzhou Branch, Central China College of Agriculture

TITLE: "Determination of Water Requirement for Germination and Water Absorption Speed of Seeds of Different Crops"

SOURCE: Huanggang HUBEI NONGYE KEXUE [HUBEI AGRICULTURAL SCIENCES] in Chinese
No 11, Nov 81 pp 13-14

ABSTRACT: Studies on the subject of water requirement of seeds for germination usually emphasize the minimum water needs and few report on the absorption speed of seeds. Aside from a laboratory experiment to determine the quantity of water required for seeds of cotton, wheat, rice, corn, soybean, mung bean, and peanut to germinate, the paper also reports a second and separate experiment with seeds of the same crops to determine the speed with which these seeds absorb water. The major factor influencing the speed of water absorption appears to be the protein content. Seeds of high protein content, such as peanut, soybean, absorb water very fast; seeds of high starch content, such as rice, corn, absorb water much slower. The speed of water absorption and the sprouting speed are not necessarily in direct relationship, however. The duration from water absorption to germination is 8 hours for mung bean, 14 hrs for cotton and soybean, 28 hrs for rice and corn, and 30 hrs for peanut. The rate of water absorption most suitable for germination is 90 percent for cotton, 70 percent for rice, 50 percent for wheat, 70 percent for corn, 120 percent for soybean, and 200 percent for mung bean.

AUTHOR: None

ORG: Department of Animal Husbandry and Veterinary Medicine, Central China College of Agriculture; Animal Breed Improvement Station, Hubei Province

TITLE: "Determination of Blood Physio-biochemical Variants of Bovines Introduced to Hubei Province From Abroad"

SOURCE: Huanggang HUBEI NONGYE KEXUE [HUBEI AGRICULTURAL SCIENCES] in Chinese
No 11, Nov 81 pp 32-34

ABSTRACT: Various breeds of beef, dairy, and work cows, oxen, and water buffalos have been introduced to this country from foreign countries in recent years and they are playing an important part in the improvement of China's local bovine breeds. For the purpose of scientific feeding and management of these foreign breeds living under the condition foreign to them, in the spring of 1977 and 81, blood was taken from 6 such animals for the test at the Animal Improvement Station. These animals have no abnormal clinical manifestation and are, therefore, presumed to be healthy. The hemoglobin, red blood cell, white blood cell, white blood cell classification, and the red blood cell precipitation rate of the 6 test animals are reported.

6248

CSO: 4009/178

AUTHOR: ZHAO Renrong [6392 0088 6954]
JIA Fuyi [6328 4395 0034]

ORG: Both of Shenyang College of Agriculture

TITLE: "Statistical Analysis of Blooming Habits of Spring Wheat"

SOURCE: Taiyuan SHANXI NONGYE KEXUE [SHANXI AGRICULTURAL SCIENCES] in Chinese
No 11, 20 Nov 81 pp 6-10

ABSTRACT: In 1943, one of the authors of this paper [the first] had carried out a study on the blooming habits of overwintering wheat in Yongan of Fujian Province. The experiment reported in this paper is considered to be a continuation of the previous research. Selected breeds of spring wheat are planted in the greenhouse as well as in the field for the study. Items of analysis include (1) Days from planting to heading; (2) Days from beginning to completion of heading; (3) Time from completion of heading to blooming; (4) Blooming time of each day; (5) Relationship between blooming and temperature and humidity; (6) Duration of peak blooming time and number of blooms; (7) Blooming sequence of spikes; (8) Time and morphology of blooms. The study involves 60 spring wheat plants, 10 for each selected breed. The observed data are reported in detail.

AUTHOR: REN Yinhan [0117 7113 3352]
ZHANG Naisheng [1728 0035 3932]

ORG: Both of Institute of Economic Crops, Shanxi Provincial Academy of Agriculture

TITLE: "Preliminary Investigation of Relationship Between Yield of Upland Winter Wheat and Major Meteorological Factors"

SOURCE: Taiyuan SHANXI NONGYE KEXUE [SHANXI AGRICULTURAL SCIENCES] in Chinese
No 11, 20 Nov 81 pp 13-16

ABSTRACT: This paper presents a statistical analysis of major meteorological factors and corresponding wheat yield data of the 24 years of 1957-1980 in the 3 communes of Sanquan, Lijiazhuang, and Yangjiazhuang, all of Fanyang County and all typical upland winter wheat areas. The meteorological data are supplied by the Fanyang County Weather Station. It is the conclusion of the authors that the yield of wheat of these areas is mainly influenced by the 3 factors of daylight, temperature, and precipitation, and of these the influence of the last is the greatest. Precipitation in the region is scanty and it does not correspond in time with the need for growth and development of the wheat crop. This is the major reason for the low and unstable yield.

6248
CSO: 4009/177

AUTHOR: NI Wen [0242 2429]

ORG: None

TITLE: "Preliminary Report of an Experiment to Compare Effects of Blue-colored and Colorless Films in Rice Seedling Culture"

SOURCE: Kunming YUNNAN NONGYE KEJI [YUNNAN AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 6, 25 Nov 81 pp 7-9

ABSTRACT: In 1979, 30 plus areas were organized for a 2-year experiment to compare effects of blue and colorless films in rice seedling culture, with a total of 50,000 mu of seedbeds participating. Both types of films are made of PVC plastics, products of Yunnan Plastics Plant, of a grade of $10 \text{ m}^2/\text{kg}$. The penetrating light wavelength is determined to be $430-525 \text{ m}\mu$ and $400-760 \text{ m}\mu$ for the blue-colored and the colorless films respectively. The films are used to form a tent over the seedlings for a duration of 10-15 days, starting at the time when they have grown 2 leaves. The seedlings thus cultivated are transplanted under identical conditions. Preliminary results indicate that the blue-colored film is more effective for raising the accumulative temperature. The seedlings turn green sooner after transplanting, the rice plants mature 2-3 days earlier, and the yield is about 3-6 percent higher. The cost of the blue-colored film is about 200 yuan/ton higher but the benefit seems to warrant the added expense. It is hoped that the quality of the dye will improve to reduce fading so that the blue-colored film may be used repeatedly and still produce the additional benefit.

6243

CSO: 4009/179

FND

END OF

FICHE

DATE FILMED

Feb 2, 1982